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PRINCIPAL CONTENTS

ARTICLES

	PAGE
CORRESPONDENCE	43
TROPICAL ARCHITECTURE: AA Course	44
HANDICAPPED CHILDREN: LCC Exhibition	44
AMERICAN IMPRESSIONS: AA Lecture and Discussion	45
HOUSING MEDAL AWARDS: Presentation at RIBA	46
THE DESIGN OF SCHOOLS: Schoolteacher's Views on Meeting Requirements	56
ARCHITECT AND ENGINEER: Thoughts on Collaboration	58
MODULAR CO-ORDINATION: Description of Belgian Experiment	59
THE "UNI-BILT" BUNGALOW	61
IN PARLIAMENT	62
CASH DISCOUNTS: Arbitration Award to Builders	63
NATIONAL BRICKLAYING COMPETITION	64
RECONDITIONING OF HOUSING PROPERTY: Royal Sanitary Institute Paper	65
WATER SUPPLIES: Minister's Appeal for Co-ordination	66
INCOME TAX AND PROFITS TAX: New Investment Allowance	67
NFBTE	67
USA ROAD DEVELOPMENT	67
SAFETY AND THE UNIONS: Accident Prevention Group Meeting	68
TIMBER RESEARCH, 1953: Progress at Princes Risborough	68
CEMENT SUPPLIES: Minister's Comments	68
LMBA: Visit to Ministry's Oxford-street Exhibition	68
RESETTLEMENT IN NEW COMMUNITIES: RICS Paper	69
TRAVELLING TIMES RECOMMENDATION: Builders' Claim Disputed	69
DEVELOPMENT IN BURMA: Industrial Delegation's Report	70
PATCHING OF OLD HOUSES: Dr. R. Bradbury's Views	70
£100,000 FOR HISTORIC BUILDINGS: Ministry Approves 31 Grants	70

ILLUSTRATIONS

BUILDERS' OFFICES AT RUISLIP ROAD, SOUTHALL: By A. V. J. Kirkham and M. R. Dumville	47
MEDICAL OFFICER'S HOUSE, CHRIST'S HOSPITAL, HORSHAM: By Oswald P. Milne and A. Underhill	51
DESIGN OFFICES, HATFIELD AERODROME: By J. M. Monro and Son	53

THIS WEEK'S NEWS

THE ASHPITEL PRIZE has been awarded to Mr. Derek Wellesley Bowes, ARIBA. p. 43

"THE MOST INTERESTING point in the development of American architecture," said Mr. Denys Lasdun at the AA on June 23, "was the search for the elimination of whatever was unnecessary and the organisation of the building to make it understandable, communicable and pleasurably so." p. 45

THE VIEW that the professionalism "which has grown up and obscured the act of building" is largely responsible for the divorce of the building-team members is advanced in a report drawn up by an architect and an engineer who have studied on the Continent the collaboration of architect and engineer. p. 58

THE NUMBER of permanent houses completed in Great Britain in May was 31,371 compared with 26,013 in May, 1953. p. 60

THE AWARD affecting Chelmsford builders on the subject of cash discounts has now been announced. p. 63

THE MINISTER OF HOUSING AND LOCAL GOVERNMENT is to invite the Central Advisory Water Committee to appoint a sub-committee to advise him on all questions relating to the collection, collation and use of information about water resources. p. 66

THE NEW INVESTMENT ALLOWANCE for income tax and profits tax purposes is described by a correspondent on p. 67

AN APPEAL to all users of cement not to over-order or to hoard cement at the peak of the building season, has been made by Sir David Eccles. p. 68

TECHNICAL OFFICERS would have to "make do and mend" and forgo the high standard they adopted in their normal housing work if the patching of old sub-standard houses envisaged in the Housing Bill was to be carried through, Dr. R. Bradbury has said. p. 70

HOUSING SUBSIDIES

THE Government's decision to reduce the housing subsidies, as from April of next year, is a sound move and fully justified by circumstances. The standard rate of Exchequer subsidy was raised in 1952 from £15 10s. to £26 14s. to take account of an increase of one and a quarter per cent. in the rate of interest charged to local authorities, and also on account of increased building costs. There were also increases in the special subsidy rates (e.g. for flats on expensive sites) and in the subsidies which local authorities are required to pay out of the general rates.

Housing subsidies have thus been running at a very high rate, and it should be borne in mind that the proposed reduction will not affect houses completed before April 1 next. Houses completed between March 1, 1952, and April 1, 1955, will continue to receive the present rate of subsidy for the full sixty-year period.

Under the Government's new proposals, the standard rate of Exchequer subsidy on houses completed on or after April 1, 1955, will be £22 1s., and there are to be reductions in the special subsidies and in the contribution required from local authorities. The immediate justification for these reductions lies in the fall in interest rates—the local authorities' borrowing rate is now 3¾ per cent. compared with 4¼ per cent. less than a year ago. Mr. Macmillan has also taken into account the increase in average earnings—which are some sort of index of capacity to pay—and in doing this it seems likely that he has had regard to what is believed to have been a long-standing principle of his department that subsidised rents should not exceed one-tenth of the average man's earnings. Building costs have, of course, continued to rise, but these have been at least partly offset by economies in design, and it is evidently the Minister's hope that further economies will result from the recent recommendations as to the layout of housing estates.

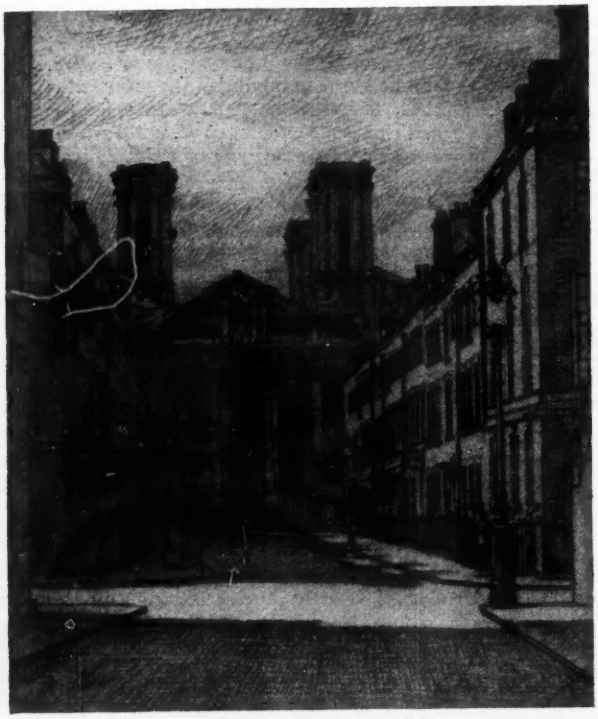
These circumstances surely provide ample justification for the decision to reduce the subsidies and thus ease the growing burden on the public funds. If there is any criticism of these cuts, it is first that they might well have been more substantial, and second that they are merely tinkering with a fundamentally unsound system of subsidy. With regard to the first of these points, it is not yet clear how far local authorities will need to raise rents, but there are various factors which suggest that any such increase should be quite small. The reduction of one-half per cent. in the rate of interest charged to local authorities will represent saving in their total indebtedness over the 60 years, and in addition there are

the economies in construction and layout referred to in the Minister's statement. Local authorities have, moreover, the duty to equalise rents as far as is reasonable ; this means that, although the reduced rate of subsidy only applies to houses completed after March 31 next, the loss to the Housing Revenue Account should be shared by all types of council houses.

In these circumstances, a greater reduction could have been made without hardship to the great majority of tenants ; one-tenth of the average man's earnings is not a great deal to spend on rent, even allowing for the possible incidence of rates. There are, of course, workers earning less than the average, some of whom are already paying as much as they can afford for a council house or flat, and for whom any further increase in rent would mean real hardship. Local authorities have, however, power to grant rebates and many authorities in fact do so. The rebate scheme is surely the proper way of helping the needy rather to go on paying subsidies for those who do not need help on the same scale.

This circumstance points to the fundamental unsoundness of the entire system of housing subsidies. The Exchequer and local authority contributions are payable automatically in respect of every council house and flat irrespective of the financial position of the occupants. It is true that some authorities pool the subsidies and charge the better-off tenants more than the full subsidised rent ; the balance in that case goes to provide an additional subsidy for the less prosperous tenants. There is, however, no way of cutting down the total amount of subsidy for a given number of houses. This system is imposing a steadily mounting burden on public funds—a burden which threatens ultimately to reach staggering proportions. There is also something gravely wrong about a system which enables those who happen to live in council houses to receive the benefit of subsidies at the expense in many cases of those who are less well off. It would surely be better to abolish the present system and to provide relief for individual tenants who are genuinely in need of help. This suggestion is sometimes resisted on the ground that it would be " political dynamite," because it would involve a means test. The fact is, however, that the rent rebate schemes now in operation involve a means test, and yet these schemes operate with remarkable smoothness. The introduction of a rent rebate scheme may cause a minor sensation in the local newspaper and be accompanied by a tenants' protest meeting, but the fuss appears to die down very quickly. The general abolition of housing subsidies would no doubt cause a national stir, but would this have the serious consequences that some people fear ? We doubt it. In any event, fear of unpopularity is always a shabby excuse for not doing the right thing.

The abolition of housing subsidies might also serve to stimulate the demand for houses for sale. People may be willing to live in a large block of council flats when the rent is subsidised, but if they have to pay a full economic rent many of them would prefer to buy their own house. Home ownership is generally regarded as something to be encouraged but the subsidising of rents, even if it does not actively discourage people from buying their own houses, is often an inducement to them to remain in rented houses. Mr. Macmillan should consider whether this does not point to an essential contradiction in his housing policies—whilst on the one hand he is trying to encourage house purchases by means of guarantees to building societies, his housing subsidies operate on the other as an encouragement to people not to buy their houses.



ST. JOHN'S CHURCH, SMITH SQUARE, WESTMINSTER. This church, designed by Thomas Archer in 1721, *was gutted by fire in the war, and is to be rebuilt and converted for use as the Ecclesiastical Records Office. The architects for the work are Messrs. Robert Atkinson and Partners. The sketch is by Mr. Edgar W. Pitt.*

DESIGNING FOR THE TROPICS

THE obligations of the western world towards the underdeveloped countries, particularly the tropical colonial areas, have been increasingly realised in recent years, but despite a long experience of colonial administration the technical and other problems of building in the tropics have hitherto been insufficiently studied in this country. That deficiency is now to be made good by the setting up, by the Architectural Association School of Architecture, of a Department of Tropical Architecture, under the direction of Mr. E. Maxwell Fry, CBE, FRIBA, who has had a long personal experience of the problems of building in hot climates.

A prospectus which has just been issued from 34, Bedford-square, with an introduction by Professor Sir William Holford, gives full outline particulars of the course of study offered and all other necessary information. The AA has brought together a staff and group of lecturers and critics all of whom are specialists in their particular departments, which cover not only town planning, design and construction, etc., but climatic, sociological, economic and other environmental factors, a knowledge of which is essential to any architect who proposes to practise in or design for tropical parts.

The wider problems involved are, of course, more economic than physical. As Sir William Holford reminds us, purchasing power in underdeveloped areas is often " too limited even to acquire mass-produced articles—let alone those individually designed." A great effort has to be made to increase the economic prosperity of these areas and to raise the living standards of their inhabitants. That is a job for the statesmen of the world, and it must be done, for political as well as humanitarian reasons. It is with the latter only that architects in their professional capacity should be concerned, and it is reassuring to know that the profession now has the organisation to equip itself for the task in hand. The AA is to be congratulated on taking the initiative in this matter, and everyone will wish it the success it deserves.

NOTES & NEWS

TEAMWORK IN HOUSING

WHAT was described as a team effort in housing was commemorated at the RIBA on Wednesday of last week when Mr. Ernest Marples, the Parliamentary Secretary, presented Ministry of Housing and Local Government medals to representatives of housing authorities, their architects and the builders concerned with the winning awards in this year's competitions for the best housing carried out before December 31 last by local authorities, housing associations or New Towns.

These awards, now in their fifth year, are one of the brightest ideas which have come from the Ministry, and must no doubt be responsible in no small measure for the overall improvement in housing scheme design and layout. Particular attention has been paid this year to quality of layout, said Mr. Marples, and this was shown to be so in the winning awards, photographs of which were on view. The association of the builders with the award, a new step, is to be commended not only in that it is bound to increase their interest in good design but as marking the fact that building is essentially a matter of teamwork.

At the ceremony both Mr. Marples and Sir Howard Robertson (who received the accolade of knighthood from the Queen on Tuesday) acted as deputies for their Minister and President respectively. Both were in good form and Mr. Marples got some shrewd points off his chest before mounting his seven-speed bicycle and returning to the House for a division, leaving Mr. S. F. Wilkinson to present the awards, which he gracefully did. May we return to a suggestion previously made that, as the winning teams come up for their awards, slides of their housing schemes be thrown on the screen?

A NEW MURAL

THE UNVEILING, by Sir Colin Anderson on July 1, of a mural by Ivon Hitchens marked the completion of the reconstruction of Cecil Sharp House, the headquarters in Regent's Park-road of the English Folk Dance and Song Society.

Opened in 1930 and partly demolished by bombing in 1940, the house has been rebuilt and modified by J. Eastwick Field and Hugh Pite handsomely to house the activities and research facilities of the Society. The mural replaces, in the Main Hall, the Musicians' Gallery of H. M. Fletcher's original design. It covers an area of 69 by 20 ft. and falls into three main "phases," but by tonality and composition rather than physical division into panels, the artist having preferred to preserve the area unbroken.

The subjects (writes Basil Marriott) are characteristic features of famous dance-forms in a suggested woodland setting. The figures introduced are full of interest, though details of traditional or other costume are not emphasised. Since the unusual size of the mural precludes an instantaneous "eyeful," leisurely browsing and discovery will maintain interest longer than is the fate of many murals. Hitchens, an apt and wise choice in the circumstances, has most successfully tackled a commission presenting considerable physical as well as artistic problems.

NEW CAPITAL CITY

MR. E. MAXWELL FRY, CBE, FRIBA, who has been working as senior architect for the Chandigarh Capital project in India in collaboration with Le Corbusier, recently lectured at the British Council in Accra, on "Chandigarh—New Capital City" while on a visit to the Gold Coast. As background to the lecture, the British Council in Accra organised an exhibition of photographs of modern buildings in the Gold Coast and other Commonwealth countries, in Great Britain and in the Persian Gulf. The Tema Corporation lent a model of the proposed town centre, and the exhibition included models of houses designed by Mr. Maxwell Fry for the new fishing village at Tema.

RIBA ASHPITEL PRIZE

MR. DEREK WELLESLEY BOWES, ARIBA, of Richmond, Surrey, who passed the RIBA Final Examination in June, 1953, obtained the highest number of marks in the examinations that year and has accordingly been awarded the Ashpitel Prize. Mr. Bowes, who is 25, was elected an Associate last February, and received his architectural training at the Brixton School of Building.

PROFESSIONAL ANNOUNCEMENT

MESSRS. TURNER AND HOLMAN, quantity surveyors, valuers and arbitrators, announce that as from July 16, their practice will be carried on from new premises at 7, Blake-street, York (tel. unchanged: York 54574).

FROM "THE BUILDER" OF 1854

Saturday, July 8, 1854

THE MANUFACTURE OF SLAG INTO BRICKS, PIPES, ETC.—I have been endeavouring for some years past to perfect this manufacture, but not having the command of the waste material, and living at present some distance from any ironworks, I have not been able as yet to persuade anyone in the trade to try the necessary experiments, although I have machinery by me which only requires the slag to be run into the mould direct from the furnace, and when pressed, a perfect brick, of any form or shape, is made, fit to be turned out, and ready for annealing in less than two minutes; when annealed by the waste heat of the furnace, it is fit for use. . . . W. G. ELLIOTT.

COMING EVENTS

MONDAY, JULY 12

RIBA.—Travelling exhibition, "Home and Surroundings." Messrs. Jenner & Co., Princes St., Edinburgh. Continuing until July 24.

SOCIETY OF GRAPHIC ARTISTS.—Twenty-eighth exhibition. Royal Institute Galleries, 195, Piccadilly, W1. Continuing open until July 30. 10–5 daily.

WEDNESDAY, JULY 14

LMBA (CENTRAL AREA No. 1).—Luncheon, followed by talk on US visit, by Mr. P. E. Trench, OBE, BSc. Derry and Tom's Restaurant, High-street, W8. 1 p.m.

THURSDAY, JULY 15

CANTERBURY COLLEGE OF ART.—Annual prize-giving and exhibition of architectural work. College of Art, St. Peter's-street, Canterbury. 3 p.m. Exhibition will remain open on July 16 and 17. 10 a.m. to 6 p.m.

BUILDERS' BENEVOLENT INSTITUTION.—Meeting to consider a revised code of rules. 47, Bedford-square, WC1. 12.30 p.m.

FRIDAY, JULY 16

ARCHITECTURAL ASSOCIATION.—Annual exhibition of school work. 34, Bedford-square, WC1. Continuing until July 29. (10 a.m.–6 p.m. Saturdays until 2 p.m.).

CORRESPONDENCE

INSTITUTE OF BUILDERS: AN OPPORTUNITY TO REORGANISE

To the Editor of *The Builder*

SIR,—As I was responsible for bringing the officers of the Institute of Builders and the National Federation of Building Trades Employers together for friendly consultation, I am concerned to see, in your leader of June 25 last, that the paragraph in the National Federation half-yearly report therein referred to appears to have been misconstrued. Such misconstruction, if general, might have serious effect upon future meetings between the two bodies.

It should be made quite clear to all concerned that the National Federation cannot undertake "the reorganisation of the Institute of Builders" any more than the Institute can undertake the reorganisation of the National Federation. The only people who can tackle any reorganisation that may be necessary are the Fellows and Members that compose it—working through the Council elected by them.

If the National Federation, having met the officers of the Institute, intends now to call upon those of its members who are also Fellows or Members of the Institute to take the lively and lasting interest that they should in Institute matters, then the voice of the Federation, or rather the voice and influence of Federation members, can be heard in the counsels of the Institute, which might well be for the real benefit of the Institute and the building industry as a whole. More than that the Federation cannot do.

May I say that I heartily endorse your call to all Institute members to attend the annual general meeting of their Institute at 48, Bedford-square, on July 21, at 2.30 p.m., and for those who are so entitled to nominate and vote for suitable Fellows or Members to fill the vacant places on the Council to govern what should be one of the most important institutions in the building industry.

A. W. YEOMANS [MIOB].

36, District-road, Wembley, Middlesex.

*** In the article referred to, we did not say that the National Federation proposed out of hand to reorganise the Institute of Builders, for obviously it can do no such thing. What we did say was that the National Federation "apparently means to see the Institute reorganised," a very different matter. And if Mr. Yeomans will read the National Federation report again, he will probably agree that this is the plain English of it, the National Federation working alike through its representatives on the joint committee and those of its members who are on the Institute's Council.

We are glad to have Mr. Yeomans' endorsement of our call to Institute members to turn out in force for its annual meeting. For we agree with him that the Institute of Builders should indeed be "one of the most important institutions in the building industry."—ED.

THE MODULE AND THE BRICK

To the Editor of *The Builder*

SIR,—I am obliged to Mr. Hartland Thomas for his courteous and informative answer to my letter on the above subject. The facts about the present position, together with the Modular Society's statement of definitions, also published in your last issue, give a much clearer picture of the aims and possibilities of modular design than has hitherto been available to the non-specialist.

The suggestion that brickmakers should take advantage of the dimensional pre-

dictability offered by modular co-ordination to manufacture a wide range of much larger components is one that, reasonable as it appears to be, needs very careful consideration. The "standard" brick is what it is because of its convenience in size and weight for handling and laying. Anything much larger and heavier would involve changes in manipulation possibly unwelcome to the industry in view of the conservative practices of the bricklayer. May I suggest that before any radical changes are decided upon the industry, and particularly the operatives, should be fully consulted through their representative organisations, if that step has not already been taken? PUZZLED.

PAINTING CONTRACTORS & NJC

To the Editor of *The Builder*

SIR,—It is an old trick, when beaten in argument, to accuse a person of quoting out of context. So Mr. Wade's criticisms leave me quite cold. I dealt with Mr. Kenyon's speech as reported in *The Builder*. Let me repeat for Mr. Wade's information that the Transport and General Workers' Union is affiliated to this Federation in respect only of building trade labourers and—I repeat—does not cater for building craftsmen.

The T & GWU as part of the National Joint Council for the Building Industry rightly plays its part in making decisions relating to the wages and working conditions of all building operatives. That is the proper function of a Joint Council, and in that sense I used the term "authoritative," for the NJC decisions are accepted as such. The fact that there are bodies who may want to be in the Council but are not is not relevant to this argument.

R. COPPOCK, General Secretary,
National Federation of Building
Trades Operatives.
Federal House, Clapham, SW4.

CRICKET

RIBA Win Over AA

THE RIBA Cricket XI met and beat the AA XI by 2 wickets in a cricket match at Boreham Wood on June 16. A wet pitch resulted in a low-scoring but exciting match. Scores:

AA

Winkley c. Baverstock b. Cooper	5
Knott c. Bishop b. Mudie	0
Collymore c. Brock b. Cooper	13
Cole b. Mudie	5
Gunasekara b. Mudie	5
Dalton b. Cooper	10
Case lbw. Cooper	1
Ringshall c. Linfield b. Cooper	4
Roberts not out	0
Fraser b. Norton	5
Tucker b. Norton	0
Extras	8
Total	56

Bowling

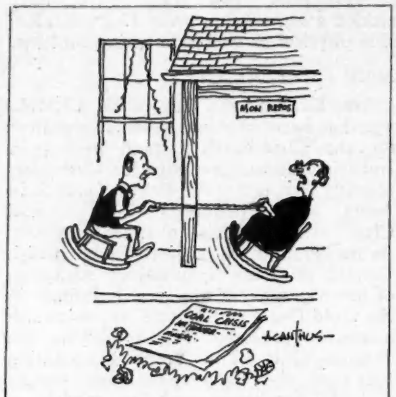
Cooper 5 for 31; Mudie 3 for 17; Norton 2 for 0.

RIBA

Brock c. Winkley b. Ringshall	0
Mudie b. Dalton	15
Bishop lbw. Dalton	14
Taylor b. Ringshall	7
Linfield b. Ringshall	3
Atkinson run out	4
Norton lbw. Dalton	4
Cooper c. Winkley b. Dalton	0
Baverstock not out	5
Tomei not out	2
Winton-Lewis did not bat	–
Extras	3
Total (for eight wickets)	57

Bowling

Ringshall 3 for 24; Dalton 4 for 15.



"We don't need a housing subsidy, but I'm not going without fuel this winter!"

TROPICAL ARCHITECTURE

New AA Department Formed

THE new Department of Tropical Architecture, which has been introduced by the Architectural Association, will operate under the direction of Mr. E. Maxwell Fry, CBE, FRIBA.

The prospectus states that the course of study, which is of six months' duration, is based on the assumption that the student has had a thorough grounding in modern design and construction, theory and practice. It concentrates, therefore, on those aspects of architecture where problems are different under tropical conditions. It does not attempt to provide a detailed knowledge of building practice in all tropical regions, but tries to make the student understand the basic effect on design problems of climatic, sociological, economic and other environmental factors.

Students who join the course from tropical countries will be given a programme of study appropriate to their particular need. The aim of the course will be first to expand their outlook on the fundamental principles of architecture, and second to help them increase their knowledge of recent development in the techniques of building.

The last part of the course will be given over to a thesis subject, selected by the student in consultation with the staff. This may either take the form of written work, or an architectural or town-planning study, related to a tropical country. A certificate of study will be awarded to students who complete the course satisfactorily. Details are available from the Principal, AA Schools, 36, Bedford-square, WC1.

CHANGE OF ADDRESS

THE new address of the National Buildings Record is 31, Chester-terrace, Regents Park, NW1 (tel.: Welbeck 0619).

APPOINTMENTS

MR. KENNETH W. DUNN has been appointed assistant architect to the Isle of Ely County Council.

MR. R. M. HOPKINS, deputy planning officer, south-east area, Somerset County Council, has been appointed chief assistant in the County Planning Department, Breconshire.

"THE HANDICAPPED AT SCHOOL"

Imaginative LCC Display

MARKING the fiftieth anniversary of the LCC's assuming educational responsibility for London, a display of the work of its Special Schools (93, providing for 10,000 handicapped children) was opened at the County Hall by HRH the Duchess of Gloucester last Tuesday. It remains open between 11.30 a.m. and 7 p.m. up to and including Saturday, July 10, and I hope all who can will go, for it is a heartening as well as a moving experience.

"Handicapped" is both a kind and a truthful description for the wholly or partially blind or deaf, and children in other ways at grave physical and consequently, probably, emotional disadvantage. For it is a *relative* term, and its implications are precisely those that, by common consent, call for the adjustment of scales, which in this case, are so heavily and unfairly weighted at the start. The cheerful matter-of-factness and skill with which this is being done quite remove the distress we may feel in a matter difficult to approach unemotionally.

LESSENING "THE DIFFERENCE"

An important part of fitting handicapped children to take a useful place in the community, I imagine, is to lessen in their own and others' eyes the "difference from the others," particularly hurtful to children, who have a natural urge towards conformity. The healing power of activities combining hand, eye and brain are, of course, well recognised in such connections as occupational therapy and rehabilitation. They naturally play a vital part in the methods evolved for the permanently handicapped child, and what follows must confine itself to that aspect of a subject outside this newspaper's normal scope.

The small tribute may perhaps be paid of confessing that I had gone to the exhibition half-prepared to "make allowances," which I quickly and shamefacedly jettisoned. Not only does the work in the art and crafts section compare indistinguishably with the best by un-handicapped children—and one sees a good deal—but whenever one picked on an exceptionally spirited and *cultivated* piece of colour or composition, it often turned out to be the work of a partially-sighted child.

There must be some law of compensation in this, and the Special Schools are, perhaps unconsciously, invoking it. The process may be more obviously at work in the case of the wholly blind or immobilised child, where preoccupation with detail and finish is more to be expected. But clearly the achievement of something complete in itself is a double blessing here, and it is impossible not to sense and share the obvious pleasure—even joy. So, for your own sake, do go.

BASIL MARRIOTT.

AMERICAN IMPRESSIONS

Lecture and Discussion at the AA

"IMPRESSIONS of American Architecture with reference to the influence of Mies van der Rohe and a brief survey of recent housing," was the full title of a lecture given by MR. DENYS LASDUN, MBE, ARIBA, at the Architectural Association on June 23. The President of the Association, Mr. Peter Shepheard, ARIBA, was in the chair. The lecture was accompanied by lantern slides illustrating the United Nations Building, the Lever Building, the Illinois Institute, the Lake Shore Apartments and other structures of different periods and in different cities from New York to Chicago, and the main idea was to trace a change which has taken place in American architecture, a change which the lecturer attributed mainly to the influence of Mies van der Rohe.

The period from 1880 to 1893 (said Mr. Lasdun) was one of the most virile of America. Chicago was the hub of railways, and for its business premises, hotels, apartments, etc., the inhabitants wanted buildings with light, flexibility of planning and prestige. This was a challenge to architects, and in answer to that challenge certain technical things developed. The lift was already in existence and the skeleton frame. Windows were large. In the changing conditions solid masonry ceased to be used for the walls of tall buildings, being replaced by other materials, notably glass. A characteristic these buildings had in common was that they were organised architecturally from top to bottom—the point of organising a building was to make it communicable.

LIGHT AND AIR

A slide was shown illustrating an insurance building which the lecturer said was airy, light and beautifully proportionate from top to bottom. Its walls were predominantly of glass, masonry being restricted to fire resistance. The point he had found most interesting in the development of American architecture was the search for the elimination of whatever was unnecessary and the organisation of the building to make it understandable, communicable and pleasurably so. In the case shown the building had been erected 60 years before the Lake Shore Apartments, but the jump from the one to the other was not very big. Van der Rohe had joined the staff of the Bauhaus, and had been delighted with the idea of the curtain wall and space flowing from one room to another. He had become Director of the Bauhaus in 1930. Three years previously he had organised a building where the characteristic was the regularity of skyline structure and the non-load-bearing wall on the outside. The Bauhaus closed in 1933 and van der Rohe left for America in 1937. In 1938 he became Director of Architecture in the Illinois Institute and was commissioned to build for it a big block of buildings. The actual execution of that scheme was not yet complete. Of these buildings van der Rohe said that he was not concerned with them as individual pieces of architecture: what he was concerned with was how they formed up into a chain. Until the composition was complete in terms of landscape one could not judge it.

The evolution which the lantern slides showed as taking place in American architecture was from the tall building with walls of masonry and steel frame to the replacement of the steel frame by reinforced concrete and the masonry wall by glass. The earlier work of van der Rohe, where the walls were in concrete, was disappointing and dull. This was because there was a great similarity between exposed concrete and brickwork, and there was a lack of the elimination which took place later.

"CORE AND ENVELOPE"

Before going to America van der Rohe had produced a landmark in modern architecture by designing the Barcelona Pavilion, and on his arrival in America he produced the Farmsworth House. This initiated what he (Mr. Lasdun) called the core and envelope design. This design had been amplified in later work. With the idea of flowing space, not confined space, problems connected with blocks of buildings like libraries and administration buildings could be solved. In this country we had in the Festival Hall an example of the core and envelope idea.

In the Lake Shore Apartments the core consisted of an outer ring of kitchens and an inner ring of vertical circulation and lifts. One of the points connected with this building was that it met equal and opposite demands, one was as to sun and orientation, while the other was as to the influence of Chicago and the lake. Mr. Lasdun said his first impression on seeing the Lake Shore Apartments was one of shock. It was the most uncompromising example of elimination that he had met in Chicago. It was a building of exquisite proportion with an ever-changing silhouette as one went round it. It was an over-simplification to say that architecture was structure: architecture was concerned with the effect of structure but it was not the structure itself. Mies van der Rohe's influence on other architects in Chicago and New York was very great.

AMERICAN CONSTRUCTION

Of the American building industry Mr. Lasdun said he had seen nothing out of our reach, but there was an opportunity for experimenting which we badly missed. The importance of the Lever Building was its popularity with Americans. One thing about the glass wall was the reflection.

Speaking of housing, the lecturer said he divided it up into density ranges. Working up from two thousand to three thousand to the square mile you found the middle-income group. Each such home cost between twenty thousand and thirty thousand dollars. This group represented 60 per cent. of the American people in the suburbs. In a district of ten thousand to the square mile, he thought there was some social cohesion, but there was a lack of urbanity. There were low-income workers in New York: 450,000 people there were living in depressed areas.

DISCUSSION

MR. WILLIAM MORRIS, proposing a vote of thanks, said that people in America were getting out into suburbs. This was changing their social habits, and in this matter architecture had a great role to play. He disagreed with the idea that people in the suburbs were lonely. When

LYNMOUTH REBUILDING PROGRESS. A general view of Lynmouth, Devon, showing the enlarged river channel. The road on the right of the picture was the site of houses destroyed in the disastrous floods two years ago.

he had asked them, "Do you have any community life?" the reply had been, "We are over-organised; there are too many meetings going on all the time." One could be lonely in a great city, but apparently there was a great deal of social activity in any American suburb. One had to belong to the School Board, to the Parents' and Teachers' Association, and other such groups. The type of architecture that had been developed in the United States was a result of the freeing of human energy and ingenuity. A common remark of the visitor to that country was, "You have great productive capacity; your industrial technique is fine." It was the freeing of human energy and ingenuity that had allowed the industrial technique to develop; and the result was seen in architecture, painting, sculpture, literature and other directions.

MR. PETER TRENCH, seconding the vote, said that his main mission in going to America was to see how it was that builders there could pay their craftsmen about six times as much as we paid ours, and yet produce buildings at not more than 50 per cent. greater expense than they were produced here. Materials, except paint and timber, were slightly more expensive than in this country while equipment, such as cranes and hoists, was slightly cheaper. As to overheads, salaries were high but overheads taken altogether were not more than 25 per cent. higher than ours. His conclusions were that the high cost of labour had forced mechanisation and there had been a drift away from site work to prefabrication in the factory. Mechanical equipment was not expensive, and the individual output was high. Operations were well planned and the individual worked harder than here. Organisation was first class. The supervisors were trained engineers, not foremen. Sub-contractors were organised to the *nth* degree: the builder had full control over sub-contractors. No contingency was allowed for weather or strikes. The operative worked faster. The industry recruited high character men. Individual specialisation was a fine art; for example, one man did nothing but level concrete. The architect understood the builder's requirements. He (Mr. Trench) had gone out with the idea that everything was cut and dried before the building started. He had not found that to be the case, but there was extraordinary co-operation between builder and architect. The builder was not left waiting for information.

A LONG TRAINING

MR. FELIX SAMUELY said that in some American universities students studied for four or five years, and there were others where the student had already gained a degree but remained to study architecture so that the total period might be about eight years. When the student left the university he was only thinking of one thing, i.e., how to make money. People were more bound by municipal regulations than they were here. Their view was that if a building was not to cost more than two million dollars it was not worth while to start a fight with the local authority; if the building was to cost ten million dollars it might be worth while.

MR. RONALD GEARY said he had been in America about two years. At Hertford University most of the students' work was based on the international style. In Chicago everyone was doing rather precise formalist work. In California the majority of the houses erected during the past fifty years had shingled roofs and wooden construction. That was the most indoor-outdoor living area in the United States. Down town in New York, in Wall Street, you got tall, stately brick buildings. As to the Lever House reflecting the buildings around it, it did this, but it also reflected the sky of New York. Sometimes this was leaden, but at other times there was such a brilliant light that it dazzled the eyes.

Replying to some points of the discussion, MR. LASDUN said that the only building which had actually moved him very much was the Lake Shore Apartment building. The thing he had found most important was the conscious effort to eliminate from building whatever was unnecessary. He was less interested in builders' profits than in the type of buildings they left behind them. As to craftsmanship, he saw nothing in America greatly different from what he saw here.

HOUSING MEDAL AWARDS

Presentation at the RIBA

SPEAKING at the presentation of the housing medal awards at the Royal Institute of British Architects on June 30, MR. ERNEST MARPLES, Parliamentary Secretary to the Ministry of Housing and Local Government, who was deputising for Mr. Harold Macmillan, congratulated Mr. Howard Robertson on the honour of Knight Bachelor which was bestowed on him in the Birthday Honours. Mr. Marples said he knew no other architect who was more worthy of the honour.

In making a few general observations, Mr. Marples said architecture was very difficult. It was a science as well as an art and became more and more difficult as time went on. The architect must not only understand drawing, but also all the technicalities that went into the production of a modern building.

He had been struck while travelling about the country with the wide gulf that existed between the design standards of housing schemes in the municipal field. The best was superlative and the worst was terrible. He would like to see this gap narrowed. It was wholly unnecessary with all the facilities for good architectural advice that existed to-day.

There were two things which he thought were important to bear in mind. The first was that everyone should have an open mind about architecture. Every human being had different ideas; so did nations and so also did architects. The second was that architecture should never hide the function that a building was to house. It was no good building cathedrals like power stations or power stations like cathedrals. A power station could be a thing of beauty to-day. Nothing pleased him more than the decision of the Royal Fine Art Commission with regard to the Willington power station. The Commission had been consulted at the preliminary stages and had expressed agreeable surprise at the standard of the design.

Referring to the awards, Mr. Marples said he was delighted that this year the builder of the winning schemes had been included in the awards. The combination of a bad firm of builders with a good architect was unsatisfactory, as was the combination of bad architects and good builders. It emphasised the need for teamwork.

There were 44 more entries this year than last, which showed a gratifying increase of interest. He considered also that the schemes for layout this year were better than any he had seen.

He praised a number of schemes in which the authorities had been able to retain the character of the locality by using local materials and following traditional designs, and also spoke of the courageous integrity of the North Midland Regional Award Committee, who had found that no scheme was worth recommending for an award.

On the subject of future competitions, Mr. Marples said they must lay emphasis on private enterprise. He was a great admirer of the construction methods of private enterprise builders, who seemed to get rhythm in production. He hoped that in future they would take good advice architecturally and aim to get a higher standard of æsthetic quality than at present. The Ministry intended to hold competitions for schemes of conversion and rebuilding, which used good and skilful architectural advice, in order that the country could retain the inherent beauty that existed in many of these old buildings.

As Mr. Marples had to return to the House of Commons to record his vote in a division, the awards were presented by Mr. S. F. Wilkinson, Under Secretary to the Ministry of Housing and Local Government. A vote of thanks was proposed by Mr. Reginald Stamp, chairman of the housing committee of the London County Council, and was seconded by Lady Portal, chairman of the housing committee of the Kingsclere and Whitchurch Rural District Council.

A full list of the award winners was published in our issue of June 11.

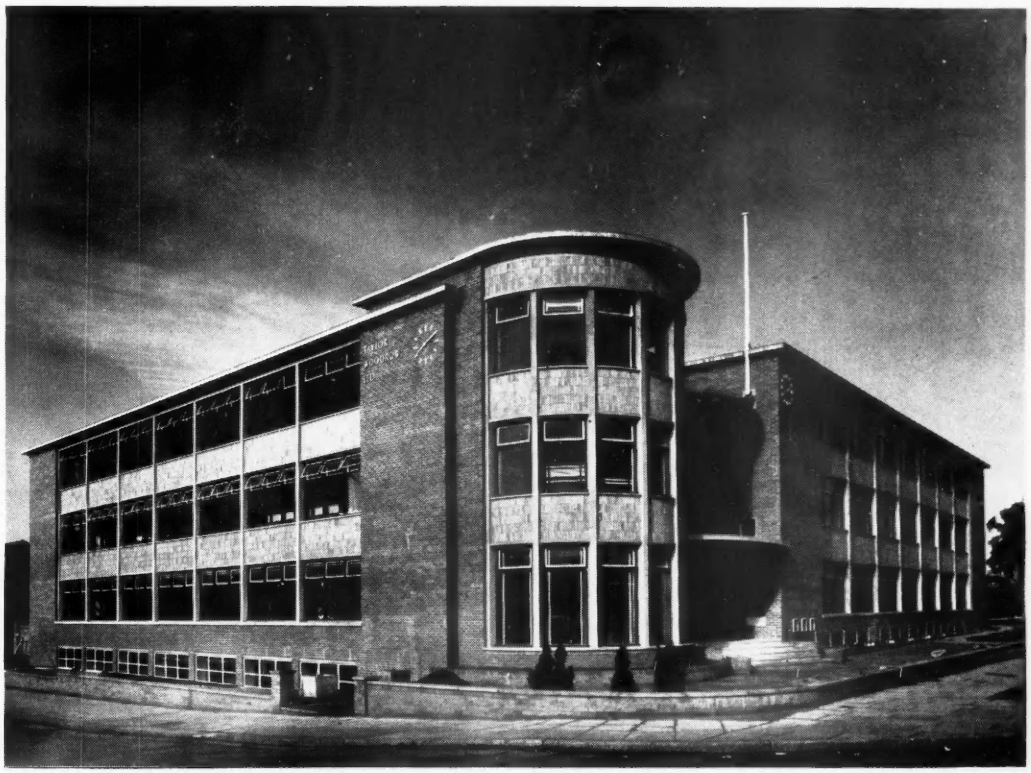
BOOK

⁂ *Books reviewed in these columns may be obtained on application to the Book Dept., "The Builder," 4, Catherine-street, Aldwych, WC2. Cash (which should include 1s. to cover postage and packing) should accompany the order.*

THE ART AND ANTIQUE RESTORERS' HANDBOOK. By George Savage. (Rockcliff, London, 15s. net.)

THIS volume sets out to be a dictionary of materials and processes used in the preservation of works of art. A careful perusal of it should help the professional and experienced amateur to restore such works of art as furniture, pictures, prints, old china, etc., which by haphazard and ignorant treatment would otherwise be ruined as works of art and their value rendered nil. Despite the information given on the restoration of many objects, it may be well stated that this work requires great understanding and experience, particularly regarding pictures; damage once done by the unpractised novice and the picture is ruined. Therefore, if of value, it is as well to place it in the hands of a proved professional. None the less, the volume gives much useful information of materials used and their proportions in the making. No doubt the book will find a place on the antique dealer and amateur collector's bookshelf.

W. J. W.



General view, showing main entrance fronting on to Ruislip-road.

BUILDERS' OFFICES AT RUISLIP ROAD, SOUTHALL

Architects
A. V. J. KIRKHAM, FRIBA, and M. R. DUMVILLE, ARIBA
(ELLIOTT, COX & PARTNERS)

Consulting Engineer
H. G. COUSINS, BSc, MICE, MIStructE

Quantity Surveyors
RIDER, HUNT & PARTNERS

Builders
TAYLOR WOODROW CONSTRUCTION, LTD.

IN order to meet the needs of an expanding business and to provide modern working conditions for the staff, this new office building has been erected at the junction of Adrienne-avenue and Ruislip-road, Southall, Middlesex, for Taylor Woodrow, Ltd. It was opened on June 1, by Mr. Frank Taylor, chairman of the company.

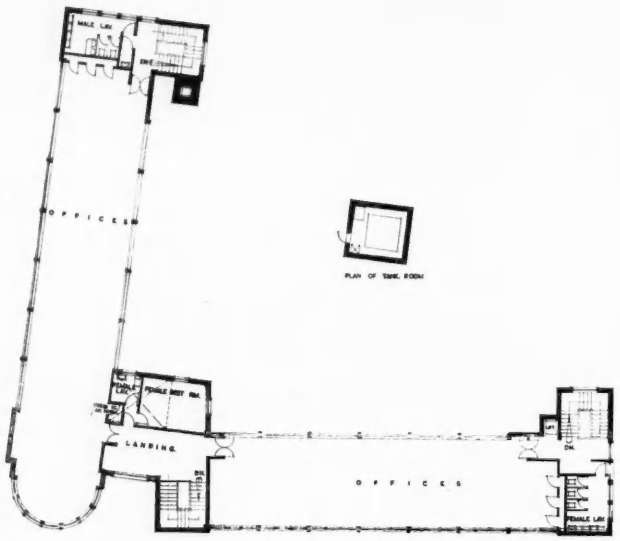
As the building was erected on the site of existing temporary structures, the design had to be so devised that it could be built in three phases to facilitate the transference of staff from the old buildings to the new, but in spite of this the building operations and transfer of staff were completed in just under 14 months.

The policy was adopted of providing large open office areas eliminating, as far as practicable, internal partitioning. In the multi-storey section, however, a 4-ft. module was selected and heating, lighting and telephone facilities so arranged that complete flexibility is afforded for any sub-division which might be required in the future. This flexibility is also assisted by the use of prestressed concrete floors in this section, with a clear span from front to rear, free from internal beams and with all storey heights the same.

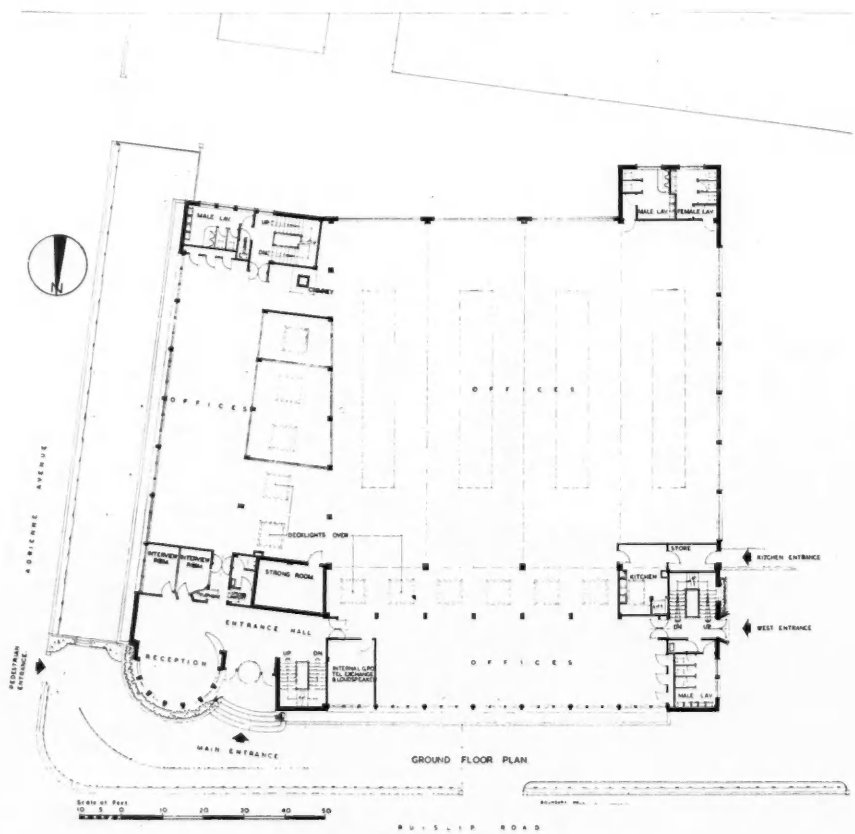
Advantage was taken of the sloping site by locating the ground-floor at such a level that useful office accommodation was provided in a lower ground-floor on the road frontages, the remainder of the space under the building accommodating a boiler house and giving provision for the storage of building materials and the parking of cycles.

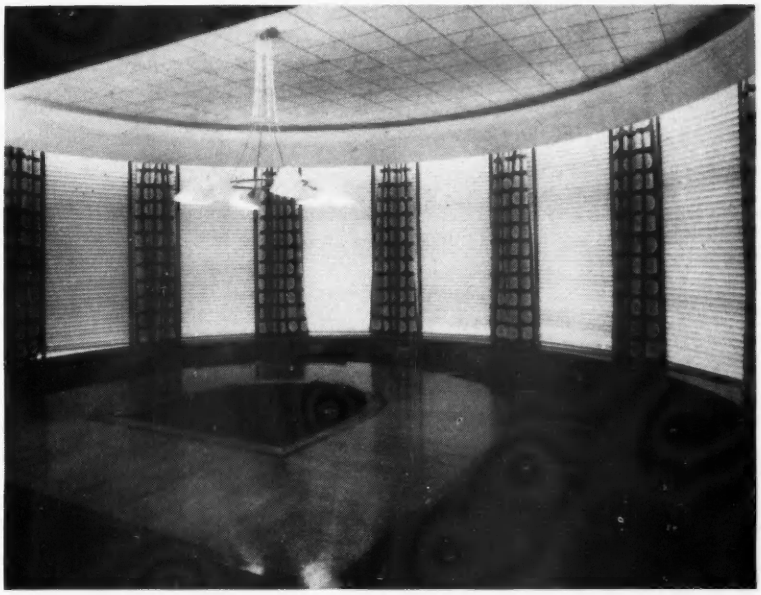
The whole of the building is of reinforced concrete framework, an interesting feature of the design being that the single-storey office section has an uninterrupted well-lit floor space of over 8,000 sq. ft. This section is of barrel vault construction with continuous lantern lights, the edge beams being in prestressed concrete with a clear span of 85 ft., these beams being given a pronounced camber to assist the general spaciousness.

All offices on all floors throughout and including



SECOND FLOOR PLAN.
TYPICAL FLOOR PLAN.





Conference room.

the barrel roofs have acoustic ceiling treatment, and the barrel roofs were designed so that any reflected sound angles meet well below the floor level with the object of avoiding reverberation.

The elevations are generally in brick, Ibstock facing bricks being used for the main elevations, and to reduce maintenance costs extensive use has been made of oiled Iroko hardwood for joinery. Generally, a simple standard of internal finishes has throughout been adopted but the entrance hall, which embodies a reception area and waiting rooms, has flush panelled walls in chestnut, incorporating the firm's Roll of Honour, with an open Iroko and bronze balustrade to the main staircase. The semi-circular conference room on the first floor is panelled in French walnut, the " D " shaped conference table being designed in keeping.

Main canteen facilities are already available elsewhere on the site but the new building includes a kitchen on the ground floor to cater for staff tea " breaks." A service lift is installed to serve the upper floors where tea trolleys are located.

Reception lounge.

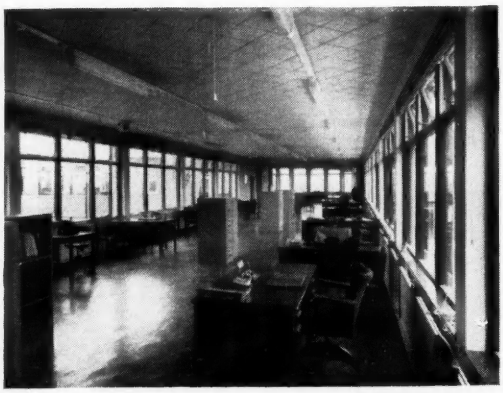
Heating is by means of low-pressure hot water from oil-fired boilers, floor panel heating being used throughout the large single-storey office section augmented by wall radiators and pipe coils at high level around the roof lights. The multi-storey section is heated by wall radiators.

The electrical installation is designed to give the maximum flexibility with continuous flush ceiling ducts accessible at any point, and GPO and internal house telephones are similarly arranged with ducts in the floors.

Following is a list of sub-contractors and suppliers :

Precast concrete, Allen (Concrete), Ltd. ; concrete roof lights, J. A. King and Co., Ltd. ; bricks, Wiggins-Sankey, Ltd., and W. and T. Lamb and Sons, Ltd. ; tarmacadam, Improved Macadams, Ltd. ; flooring, Marley Tile Co., Ltd., Phœnix Rubber Co., Ltd., E. J. Elgood, Ltd., and Cellulin Flooring Co., Ltd. ; stonework, Wm. Knight and Co., Ltd. ; felt roofing, Permanite, Ltd. ; felt roofing and tanking, Ruberoid Co., Ltd. ; joinery, Builders Supply Co. (Hayes), Ltd. ; ironmongery, Comyn Ching and Co. (London), Ltd. ; revolving door, T. B. Colman and Sons, Ltd. ; flagstaff, J. W. Gray and Son, Ltd. ; Venetian blinds, Venetian Vogue, Ltd. ; roof lights and metal windows, Williams and Williams, Ltd. ; bronze letters, A. J. Binns, Ltd.

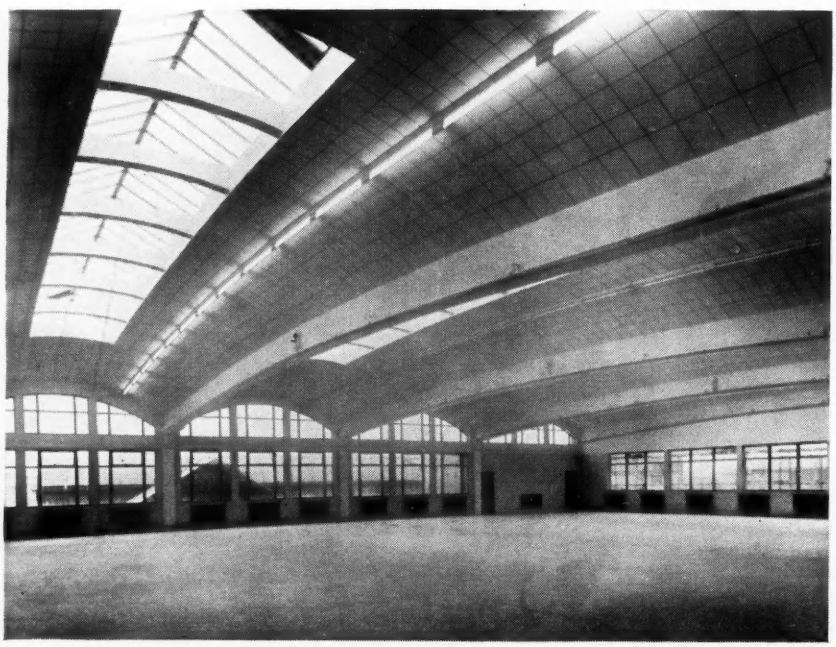
Entrance gates, Grundy Arnatt, Ltd. ; tiling, Carter and Co. (London), Ltd. ; plastering, Hill Brothers ; suspended ceilings, W. H. Colt (London), Ltd. ; acoustic tiling, H. W. Cullum and Co., Ltd. ; plumbing and heating, Matthew Hall and Co., Ltd. ; sanitary fittings, Doulton and Co., Ltd. ; storage tank, Braithwaite and Co. (Engineers), Ltd. ; electrical installation, Troughton and Young, Ltd. ; lightning conductors, Blackburn Starling and Co., Ltd. ; glazing, Aygee, Ltd. ; painting and decorating, Hayes Decorators, Ltd. ; service lift, Geo. Johnson, Ltd. ; furnishings, Heal's Contracts, Ltd. ; french polishing, W. J. Brown and Co., Ltd. ; sand and aggregates, Cranford Sand and Ballast Co., Ltd. ; Stahlton floors, Costain Concrete Co., Ltd.



Second floor—Adrienne-avenue wing.

General office area.

BUILDERS' OFFICES AT RUISLIP ROAD, SOUTHALL



Reinforced concrete barrel vault roof of general office area.

View of rear elevation.

MEDICAL OFFICER'S HOUSE, CHRIST'S HOSPITAL, HORSHAM

Architects
OSWALD P. MILNE & A. UNDERHILL, FF.RIBA

Quantity Surveyors
VEALE & SANDERS, FF.RICS

Builders
ROWLAND BROS.

CHRIST'S Hospital, although situated in the country about two miles outside Horsham, did not escape the attentions of Hitler. In 1944, a flying bomb fell in the grounds and demolished one of the sanatoria which, fortunately, was empty at the time.

When the school was built it was necessary to provide for the accommodation of infectious cases as well as for patients with ordinary indispositions, and these were accommodated in separate buildings.

The bomb completely destroyed the sanatorium for infectious cases.

With changing times infectious cases are sent to outside hospitals and this building had become largely redundant. On the other hand, a house for the medical officer, with a consulting room and a waiting room, etc., was much needed.

After considerable negotiations the War Damage Commission agreed to find the cost of such a house rather than to pay for the rebuilding of the sanatorium. The arrangement saved the Commission a considerable sum and provided a useful building for the school.

The house had to be neighbourly to the existing school buildings and brick and tile served that purpose—Sussex brick for the hollow walls and pantiles for the roofs. The disposition of windows and doors and the emphasis to the front door give a simple but attractive air to the elevation. A normal small house directly planned was required with the addition of a consulting room, a waiting room on the ground floor and a sick room and its bathroom on the first floor, which accommodates one or two boys from the sanatorium who might not have fully recovered when the school breaks up for vacations.

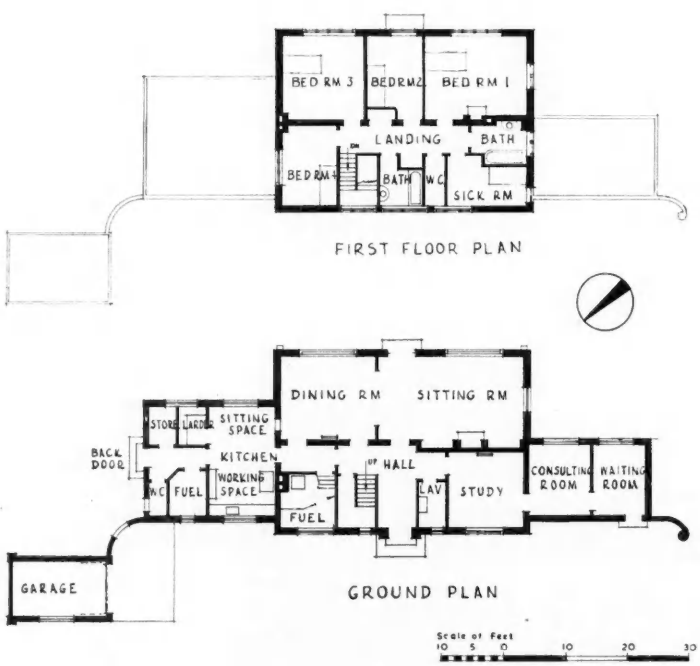
The sitting-room and dining-room of the house face the garden, and by means of folding doors can be opened up into one large room. The following sub-contractors were engaged :

Heating and hot water, Benham and Sons; ironmongery, Comyn Ching and Co. (London), Ltd.

A small central heating system is installed in the house.

View of front elevation.

MEDICAL OFFICER'S HOUSE, CHRIST'S HOSPITAL, HORSHAM



Front elevation facing Great North Road.

DESIGN OFFICES, HATFIELD AERODROME

Architects
JAMES M. MONRO & SON, ARIBA

Quantity Surveyors
A. L. CURRIE & BROWN

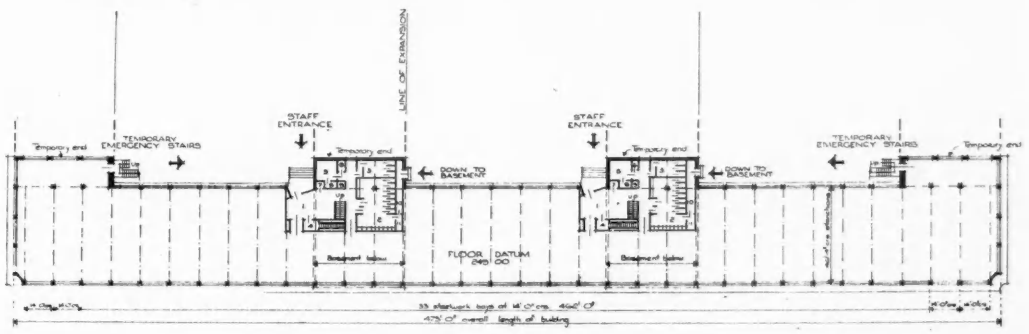
Builders
BOVIS, LTD.

THIS new block has been built by the de Havilland Aircraft Co., Ltd., to accommodate under one roof members of their design staff and administration personnel, many of whom have been working in temporary premises.

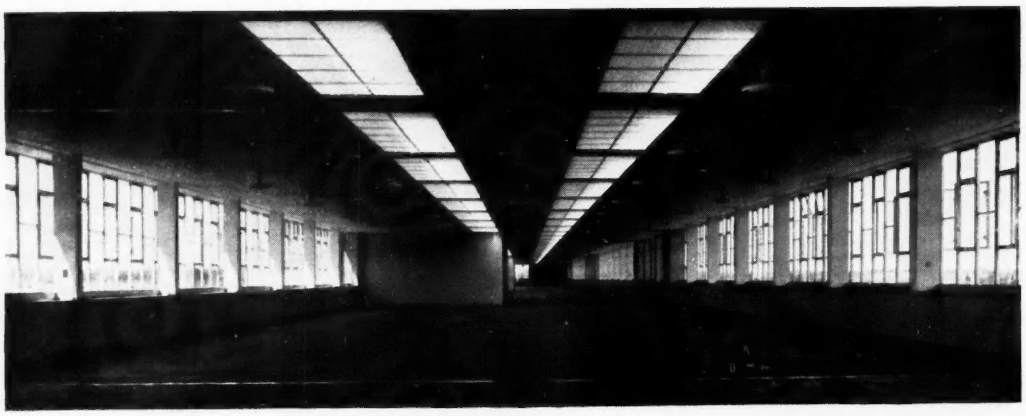
The building, which has been constructed in 13 months from sketch plans to completion, is designed to harmonise with and to diminish as little as possible the importance of the existing Administration Headquarters. It is part of a master scheme for the potential development of the frontage to the Great North Road and has provision for extension in the form of four legs. All necessary lavatory accommodation, service mains and plant rooms for the whole have been incorporated at this stage.

Its main approaches are situated at the rear of the building in order to allow easy circulation to the existing Experimental Shops and to permit maximum forward placing of the building having regard to amenity.

In order to conserve natural daylighting in the drawing offices it was considered appropriate to group



GROUND FLOOR PLAN



Second floor.

the lavatories and staircases into service towers at the point of junction with the future wings. This conveniently occupied the least well-lit areas and artificial lighting and ventilation was used throughout, except for natural top-light to the staircases. These towers contain fully accessible vertical service ducts from the calorifier and switchgear rooms in the basement up to the tank and ventilation plant rooms at roof level, providing for the lavatory blocks at each floor level.

The plant rooms contain fully automatic equipment for the supply of tempered air to the building and duplicated lavatory input and extract fans are incorporated. All are sized for the accommodation of future extensions.

Service rooms in the basements are kept entirely separate from the main basement areas by means of fire-resisting walls and have separate approaches from a door to the open quadrangle. It is also possible to enter the service duct from the lavatories at each floor level. Automatic fire-resisting shutters are incorporated in the ductwork, as are sections giving acoustical absorption.

The remainder of the basement is designed for use as document and plan storage and is approached separately from the entrance foyer.

Maximum flexibility of utilisation within the main walls is the client's main consideration, coupled with good daylighting and some degree of acoustical

Entrance hall and staircase.

Laylights over main staircase.

absorption. To this end the building is designed on a 2-ft. module, with stanchions spaced at 14 ft. centres. Beams spanning the entire width are 46 ft. long and fixed to the stanchions with specially stiffened connections. Thus the internal layout of four 10-ft. drawing benches with a 5-ft. central corridor is made possible, the uninterrupted internal floor area of each drawing office being some 22,000 sq. ft. Three such offices are provided at ground, first and second floors, connected by the two service towers.

Expansion joints on the 473-ft. long building are designed without duplication of stanchions and provide for relative movement at three places. Much thought was given to their design and construction in order to minimise disturbance to both the internal and external finishes.

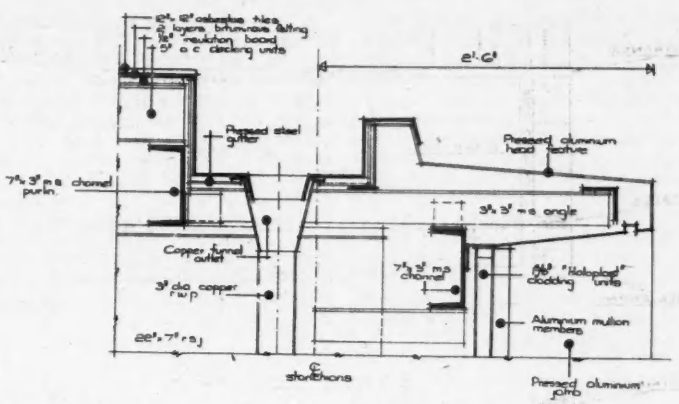
Heating. Radiant ceiling panels are used for general heating and these give the required acoustical properties. Some 14,000 2 ft. by 2 ft. Menzel removable plaster panels are fixed to a light metal grid containing the heating coils with glass quilting positioned above to act as an insulating membrane and as an acoustical absorbent; it is continued vertically as a vapour barrier to the external walls. Small coloured pegs are attached to appropriate panels to denote the services concealed above. All panels are readily demountable and exchangeable.

Ventilation is on the plenum principle with a balanced and filtered supply of tempered air and variable rates of flow and extract, the main distribution ducts being placed outside the main stanchions at the breast wall to avoid increase in the overall height of the building—and its stairs—by running beneath the floor.

Electrical. The main high-tension transformers are positioned in the basement and local distribution is via wall and ceiling ducts. The wall ducts at bench height contain in three sections the lighting and power points, and the internal and external telephone points. The ceiling duct above the suspended ceiling has plug points affixed and flexible leads are taken therefrom to the lighting points, the position of which can be varied without alteration to the main wiring. Specially designed fittings using internal silvered bulbs produce indirect general lighting of about 15 ft. candles service intensity and in addition individual drawing-board lamps will be used.

Externally. The front elevation is designed to show the stone-faced ends of the wings for future extension, linked by three blocks clad with a Holoplast curtain wall. The stone is particularly white in colour with a mother-of-pearl exposed aggregate to give brilliance. Aluminium windows are set into the curtain wall extruded sections, the whole being contained in a projecting aluminium surround. These link blocks move as a unit in relation to the expansion joints.

The building in plan is surrounded by a deep plinth which solves the problem of levels for all main drains and also contains some services. The ground floor s raised in order to maintain a level with existing buildings in the event of future extension, as well as to accommodate existing site levels.



Aluminium head detail.

Internally. Internally the effect is spacious, and, as mentioned, wide clear spans and continuous glazing and ceilings give complete freedom to divide on a 2-ft. module.

The flooring in the main office areas is in Opepe laid in herringbone pattern and the plastered walls are emulsion-painted a pale shade of duck-egg green, with skirtings and windows in light mushroom. Cills to the ground floor are of faience, whilst those to the first and second floors are of built-up timber construction covered in Korkoid and positioned at bench height. The depth of these cills allows the use of double sashes should future aircraft noise render this desirable.

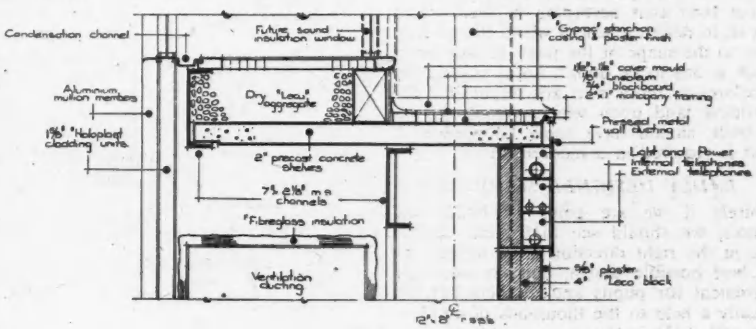
On the ground floor of the southern service tower a glazed entrance opens into a small reception foyer for visitors and from which the basement is approached for document storage. A hall without provision for reception, but otherwise similar, is at the base of the northern service tower. The main staircases rise to the upper floors, the strings and risers being faced in green Korkoid with white Ferodo nosings incorporated in the treads. A mahogany capping and simple handrail covers the metalwork, whilst a screening panel is formed throughout the flight by means of block-board attached to the balusters and covered with a deep red Vinyl leathercloth. All hardwood joinery is in mahogany.

Grouped around the ground-floor halls are a telephone booth, tea preparation room, tea trolley store, a book hoist and lavatory accommodation for both sexes.

The following is a list of sub-contractors:

Precast floor units, Trussed Concrete Steel Co., Ltd.; stonework, Empire Stone Co., Ltd.; steelwork, Redpath Brown and Co., Ltd.; wood block flooring, Hollis Bros., Ltd., ceiling panels and heating, K. C. Menzel (Heating Engineers), Ltd.; metal windows, Crittall Manufacturing Co., Ltd.; glazed tiling and terra cotta work, Shaws Glazed Brick Co., Ltd.; Holoplast cladding, Holoplast, Ltd.; patent glazing, Helliwell and Co., Ltd.; asbestos decking and aluminium cladding, Brock Roofing, Ltd.; pressed steel stairs, Fredk. Braby and Co., Ltd.; lifts, Marryat and Scott, Ltd.; pressed steel tanks, Braithwaite and Company Structural, Ltd.; waterproof screeding and rendering, Quickset Water Sealers, Ltd.; felt roofing and insulation board underlay, Williams Briggs and Sons, Ltd.

Electrical works, Electrical Installations, Ltd.; Magna roof lights, Girlingstone Ferro-Concrete Co., Ltd.; plastering, Clark and Fenn, Ltd.; floor screeds, Kendells' Flooring, Ltd.; glazing, Aygee, Ltd.; tiling and terrazzo, Zanelli (London), Ltd.; ventilating system, Brooks Air and Heat Systems, Ltd.; balustrading, Grundy Arnatt, Ltd.; insulation board lining, Anderson Construction Co., Ltd.; cat ladders and access covers and frames, Clark, Hunt and Co., Ltd.; Korkoid flooring and asphalte bed, Korkoid Decorative Floors; Medina partitioning, Saro Laminated Wood Products, Ltd.; plastering, Thomas and Wilson, Ltd.; steel rod furring and expanded metal lathing, Steel Bracketing and Lathing, Ltd.



Typical cill detail.

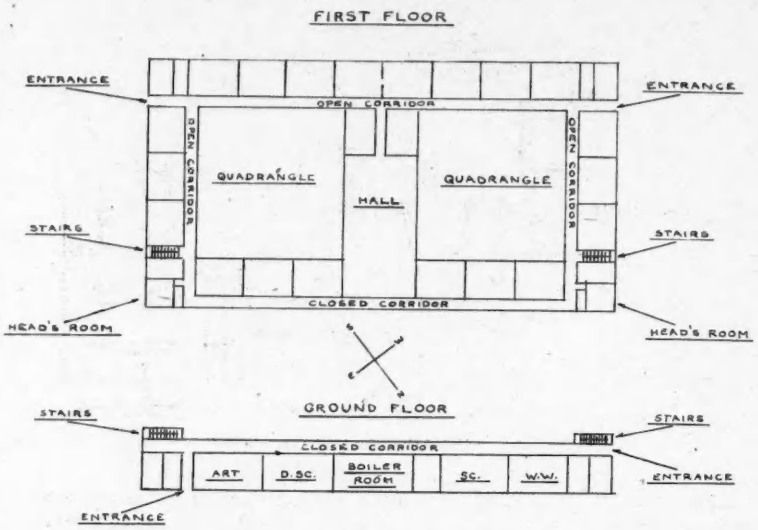


Fig. 1.—Sketch plan of mixed school to take juniors and seniors.

THE DESIGN OF SCHOOLS

A Schoolteacher's Views on Meeting the Requirements of Pupils and Staff

By JOHN MACRAE

AS a teacher, I suppose I am neither qualified to draw plans of schools nor to criticise the designs of schools; yet I have served in so many schools, where neither noise nor lack of light have been deemed to be disadvantages that I feel it is necessary for someone who actually teaches in a school to establish what is necessary in a building the primary function of which is the accommodation of boys and girls for the purposes of study and the exercise of thought.

In order to have ideal conditions for studying, two things are essential: one is light and the other is quietness. By light, I mean a sufficient supply of "natural" light, that is light from the sun or the atmosphere. This can be obtained only if *all* classes, and therefore all schools, no matter whether infant, junior, secondary or grammar, face in the right direction. That direction is south. The second requirement can be fulfilled by placing the site of the school away from any major road or noisy thoroughfare and by the judicious use of materials when building the school.

It may not be fair to criticise architects for the general "madness" of much school design, as these persons have probably had to cut their coat according to their cloth; that is, to design a school which has to conform to the shape of the piece of land upon which is has to be built. Local authorities, therefore, or those who are responsible for providing land upon which schools are to be built, should have some knowledge of what is required in a modern school.

BADLY DESIGNED SCHOOLS

Surely if we are going to build new schools, we should see that these schools face in the right direction and are built to the best possible design, and are not only convenient for pupils and teachers but are actually a help to the thousands of children who will study in them.

I have selected only two schools for criticism, one of which was built in 1928 (Fig. 1) and the other is an older school (Fig. 2). Neither of them has been chosen because of the numerous faults in its design; both are typical of the average pre-war school throughout the country.

There may be some excuse for schools which were built in the early twentieth century or before, but there can be none for schools which were built during the last 30 years. The disturbing factor, however, is that even to-day we are building schools with the same disregard for the essentials which I have already stated.

The first school, a combined junior and secondary, is a model of symmetry, but that is all it has as a recommendation. First of all it is built on the side of a hill which slopes downwards towards the north; the buildings higher up the hill take away what smattering of sunshine it would have received, especially in the winter, had it been built on flat land.

A school should always be built on a comparatively level surface or on land sloping slightly towards the south.

Secondly, the hall in the middle forms two quadrangles.

In order to provide a quadrangle the wings of a school must face east, south, west and north, or approximately so, which means that instead of each classroom receiving a full day's sunshine, the eastern and western wings receive only half a day's, even then the sun does not shine fully into the room but only at an angle, while the northern part receives none; only the part facing the south receives sunshine all the day.

The quadrangle plan is extremely unsatisfactory and an architect who even thinks of using it is either letting the sentiment attached to his own boyhood days upset his judgment or else he has a grudge against schools.

In this case each quadrangle has an area of 25 yards square, composed of bushes enclosed by a grass border, or a total area of 50 yards by 25 yards.

The school is facing approximately north-east and south-west, which means that so far as sunshine is concerned the Art, Domestic Science, Science and Woodwork rooms on the ground floor receive none, while the majority of classrooms on the first floor receive approximately half a day's, a few receiving practically none at all.

The only protection which the open corridor affords is the canopy overhead. Young children moving from one warm classroom to another in winter time have to pass along these draughty, icy corridors, with results which can be left to the imagination.

The closed corridor on the first floor, which is directly above the specialist rooms, is made of concrete and faced with mosaic and

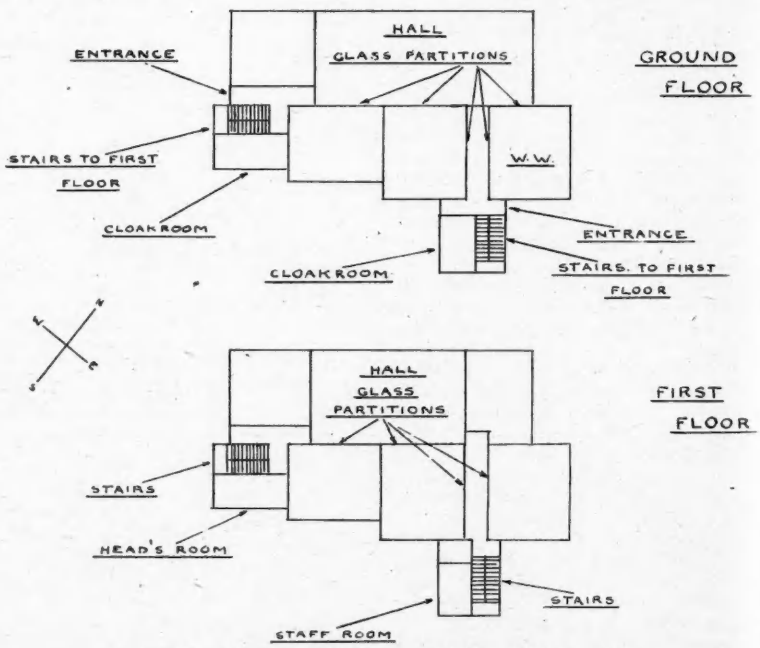


Fig. 2.—School to take between 300 and 400 pupils.

every step taken by a pair of hobnailed boots can be heard distinctly down below.

The playground is in front of the specialist rooms and physical training and games are taken here. When one gets a teacher shouting commands to a rowdy class just outside one's window, the noise is apt to be distracting. In this school the playgrounds are adjacent and more often than not the boys of one school are in their lines while the others are playing, which makes commands very difficult to hear.

The second school is of the two-storey "solid block" type with classrooms facing east, west, south and north. Here again, due to incorrect planning, most classrooms receive only half a day's sunshine while some

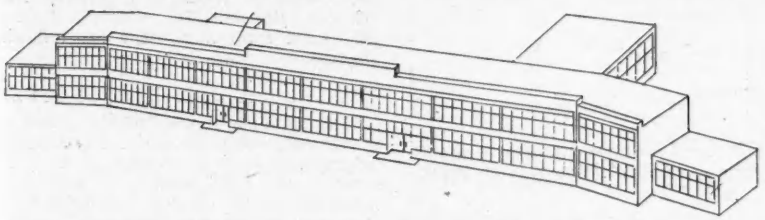


Fig. 3.—An impression of the "ideal school" layout.

receive practically none at all. Certain classrooms have only a glass partition between the classroom and the hall and the classroom and the corridor which allows sounds to be easily transmitted from one room to another.

This school was an extremely noisy one; the teacher in the room across the corridor from the woodwork room would have to raise his voice in order to compete with the noise; the woodwork boys would be cutting mortises, a class of girls would be playing rounders outside and screaming as only girls can scream, while 50 or 60 lusty young voices in the hall would be singing "Come to the Fair." Amidst all this chaos of sound I would gladly have gone to the fair.

THE MODERN SECONDARY SCHOOL

In a land which receives a minimum of sunshine, to design a school so that some classrooms get no sunshine while others receive very little is either madness or criminal negligence. In addition to the extra expense of providing electric light to light these rooms considerable eye-strain must be suffered by thousands of children when studying by artificial light. A gloomy classroom which has no other light than electric light is a bad classroom; a bright cheerful room very often goes a long way towards creating a bright cheerful class.

If all classes, therefore, are to receive sunshine in the morning and afternoon there can only be one plan and this plan I have shown with very slight variations. Probably the best of all is the "straight line" plan. It is simple for the architect to draw and simple for the builder to "set out" and build and would probably be much cheaper than some schools whose complex designs must have given the builders a headache even if they didn't give the architects one. I doubt, however, whether this would have sufficient "design."

The plan which I have illustrated (Fig. 3) is the "straight line" plan running from east to west with two wings diverging at an angle of not more than 15 deg. This allows for protection against the weather while the divergence of the wings is insufficient to shade the central portion in the morning or afternoon; it also ensures that all classrooms, whether specialist or otherwise, receive the sunshine throughout the whole day.

To be able to do this, however, two conditions are required. First it may be that in the vicinity of the school the roads are running, say, from NE to SW and also at right angles to this direction which is from SE to NW. If this were so it would be necessary to place the central portion of the school at an angle of 45 deg. to these roads in order to face the south as otherwise if the school were built parallel to either one or the other it would not be facing south.

Probably severe criticism would be directed against this from an aesthetic point of view, but surely it is wiser to build a school in a position which will benefit the school and ignore the roads rather than build it parallel to a road and deprive thousands of children, who will pass through the school during the next fifty to seventy years, of half the sunshine in their school lives.

Some schools, which otherwise have been fairly well designed, have been severely handicapped by being built parallel to roads facing east, west or even north, with a consequent lack of sunshine.

LENGTH OF FRONTAGE

To fulfil the second condition, a school must require a longer frontage. It is obvious that if one or two wings which would otherwise face east and west are to be contained in the part facing south then that part of the school must be extended. This, however, need not mean that the total area of ground required by the school need be much greater.

The Board of Education's views in a pamphlet "Elementary School Buildings" published in 1936 stated: "Every effort should be made to avoid an excess of road frontage, which is disadvantageous from the point of view both of expensive road charges and of the likelihood of noise and dust." This is rather like "spoiling the ship for a ha'porth of tar" by curtailing the only measurement which will ensure adequate lighting for all classes. I wonder how many schools have been ruined due to the lack of an extra 10 or 15 yards of frontage.

In addition to these requirements the modern school must cater for the provision of school dinners. This requires a dining hall, a kitchen and a washing room. These will naturally be placed at the back of the school. The assembly hall will also be at the back, but preferably on the right-hand side so that the assemblies, which are usually taken in the morning, will receive what sunshine it is possible to receive in that particular position. The sizes of the hall, dining hall, kitchen and washing room are only approximate and would be governed by the requirements of each school.

No provision has been made for cloakrooms, as these have been found to be a waste of accommodation as children are not likely to leave their clothes where they cannot keep an eye on them. The lavatories should be an integral part of the school and placed near the entrance; it should not be necessary for children to have to negotiate a bleak playground, full of slush, in the winter in order to reach them.

The playground will naturally be in front of the school, but this should only be used as a playground. Any games or other form of physical training taken between playtimes should be performed at the back of the school as otherwise the noise created would disturb the classes in school.

In the mixed schools of approximately 400 pupils (Fig. 4). four rooms have been allowed to take the following specialist subjects: Woodwork, Art, Science and Needlework, and I suggest that the correct positions for these rooms are on the extreme

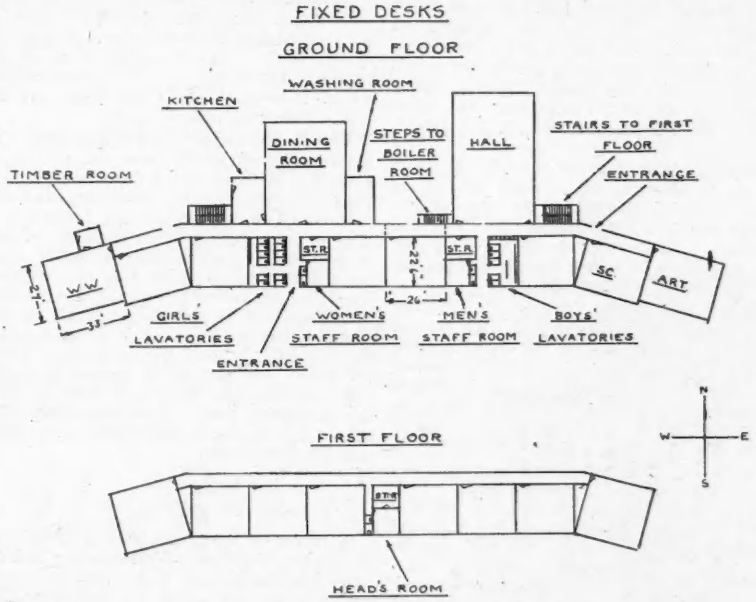


Fig. 4.—A school for 432 mixed pupils.

right and left of the school as they require to be larger than the ordinary classroom. The schools which I have illustrated are senior or secondary schools which take pupils from eleven to fifteen years of age.

THE CLASSROOM

In order to design a classroom accurately one must have an accurate impression of the number of pupils to be accommodated and the type of desk. The "old" classroom which is still in existence in nearly all schools "accommodates" from 40 to 50 boys on the "sardine" principle, that is, two boys sit shoulder to shoulder in a desk, the front of which touches the desk in front and the back is touching the desk behind. The desks are usually four or five deep, and between each row is a narrow passage which enables boys to reach their respective desks.

On this principle, 40 to 50 boys can be crammed together into quite a small space. It has, however, two serious defects, one of which is that it enables copying to be done quite easily, while the other is that it encourages talking. Both of these inhibit individual work, and therefore if we are going to design a classroom which will be beneficial to both pupils and teacher we must allow sufficient space for each boy to be seated individually with space on either side and also behind and in front of him.

The movable single desk and chair, separate units, crammed into roughly the same space, which some education authorities seem to think an improvement, is even worse, because the continual scraping of desks and chairs on the floor constitutes a nervous strain for both pupils and teachers.

In a school which faces south, the morning sunshine will strike the western wall of each classroom, and the desks should therefore face in this direction.

The framework of the desk should be made of stainless tubular steel, as compared to the cast iron of the old desk, and the seat upholstered in an attractive shade of leather, for, after all, the school is the place where neatness is, or should be, taught either directly or indirectly.

If then in the near or distant future we consider it possible to equip classrooms in this manner, we must consider one other requirement. To raise the standard of education, classes must be cut. I am convinced that the maximum number of pupils to be taken by any infant, junior or senior teacher should be no more than 30. However, I will compromise and put the number at 36.

Most teachers in senior schools take from 40 to 50 children, while many teachers in junior and infant schools take over 50, but surely this is not education. Much of the illiteracy to-day arises from the fact that the numbers with which the average teacher has to contend are unreasonable.

In a lesson lasting an hour, if a teacher only spends three minutes with each boy he can cover a bare half of the class; in addition to this, marking is heavy. The number 36 allows for six double rows of desks with six in each row (Fig. 5). These could be accommodated in a classroom with a minimum length aand breadth of 26 ft. by 22 ft. 6 in. Each desk, including the seat, should be constructed as one unit.

Classrooms should be built as separate units with no communicating doors except by way of the corridor. It will not be necessary to have windows between classrooms and the corridor. The walls between each classroom and between classrooms and the corridor should be thick enough to prevent transmission of noise, and the doors of classrooms should be of the solid, "flush" type as this is more noise-resistant and less dangerous than the old, grained, glass panelled door with which we still have to contend. The floors of classrooms and the corridors should be solid and faced with wood blocks or some other noise-deadening material.

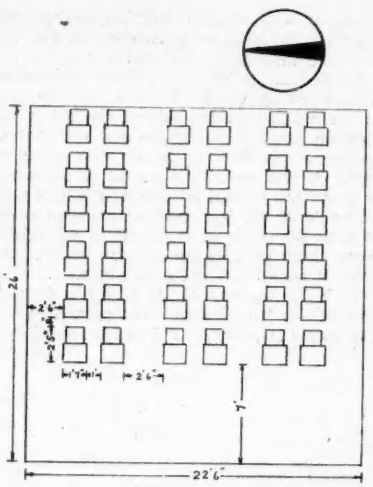


Fig. 5.—Classroom with three double rows of fixed desks to seat 36 pupils.

PAINTING AND DECORATIONS

With regard to the painting of the classrooms, all classrooms should have the walls and doors decorated in light attractive colours which blend; the old graining should be abolished. The wooden part of the desks should be made of light-coloured wood and polished the natural colour. No classroom or specialist room should be less than 12 ft. in height; this allows the light to reach well to the inward side of the room and also admits fresh air without the intrusion of draughts.

Windows have gradually attained their correct size. Practically the whole length ot each classroom from a height of approximately 3 ft. to nearly ceiling level should be one large window. The measurements which I have given in the plans are all inside measurements.

The mixed school to accommodate 432 pupils (Fig. 4) would have the two main entrances at the front of the school flanked by the girls' and boys' lavatories, and the playground would be divided by either a wall or iron railings. At the rear of the school the two entrances would be used mainly by classes going out for physical training or games, and would prevent any disturbance of classes at the front of the school. The boiler room is directly under the classroom between the hall and the washing room, and should be accessible to the driver of the coke lorry. In order to keep the lavatories under close supervision the men's and women's staffrooms have been placed opposite them.

PLANNING REPORT

A report on the preliminary proposals for Maidstone, Snodland, West Malling and related communities in Kent has now been prepared by Mr. J. W. R. Adams, OBE, PPTPI, Kent County Planning Officer.

ARCHITECT & ENGINEER

Some Thoughts on Collaboration

IN 1953 the Trussed Concrete Steel Company, Ltd., offered two scholarships, each of £100—one to an ARIBA and the other to one of their own engineers—the purpose being to enable the winners to spend three weeks on the Continent together, to study interesting reinforced concrete work, with special reference to collaboration between architect and engineer. The report of the winners, Mr. G. Graham, DipArch, ARIBA, of Nottingham, and Mr. P. B. Wood, BScTech, AMIStructE, of Manchester, has now been published in the current issue of the "Truscon Review" (published from Truscon House, Lower Marsh, London, SE1), and from it we take the following extracts:—

COLLABORATION ON THREE LEVELS

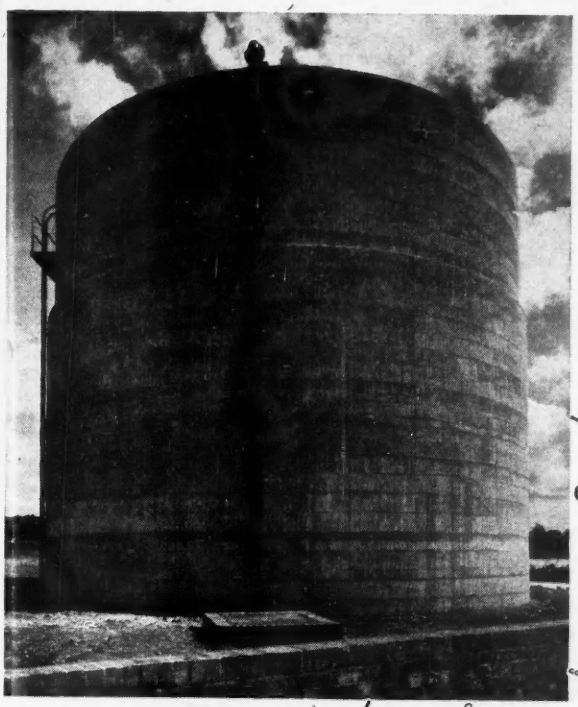
Collaboration between architect and engineer exists on three levels: The architect-engineer, or engineer-architect, is rare, but does occur. Luigi Moretti, in Rome, was adamant that the one-man combination was the only way to real integration, and has himself shown the beauty which one such talented mind can produce. In general, however, Moretti's successes have been buildings in which architectural problems have predominated—the Casa del Girasole in Rome, for instance, where the structural problem was slight compared with that of contemporary architectural expression.

Alternatively, where structure is the main problem, the superiority of single-mind creations has also been demonstrated: the magnificent aircraft hangars near Rome by Nervi (destroyed by the Germans during their withdrawal in 1944), and the beautiful bridges by Robert Maillart in Switzerland, are but some of the many outstanding achievements by contemporary engineer-architects.

Such demonstrate that the architect-engineer and the engineer-architect not only exist but are probably without rival in those fields of building where problems of either architectural expression or structure predominate. Collaboration between two or more minds, however, would seem to be necessary in order to tackle the general run of building tasks; especially in view of the rapid contemporary development in technique and building methods. The rare genius will still appear, and must be gratefully allowed to exercise his talents, but the object of producing individual combinations of architect and engineer would be a fallacious foundation for professional training.

The second level of relationship—where architect and engineer are joint partners in a practice—was encountered in Rome. Architect Eugenio Montuori and Engineer Leo Callini very kindly set forth their views and explained the organisation of their practice. They won the open competition for a design for the Rome Terminal Railway Station, but were required to form a working group with the winners of the second prize to carry out a revised scheme. The second prize had been awarded to a similar group of architects and engineers, and the Rome station testifies what can be achieved by architects and engineers working in permanent collaboration.

The idea of such a practice had been much discussed by the scholarship holders before the opportunity of meeting Montuori



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and Callini arose. The advantages are obvious. But in Britain many young architects gather just enough small jobs to survive in private practice. . . . Could a young, joint practice receive sufficient commissions of the type which would justify the engineer partner's existence? This seems very unlikely, and the lack of such endeavours would seem to underline the difficulty of establishing them.

It was thus of great interest to discuss the point with Montuori and Callini and to see the range of work they were doing with a comparatively small organisation. Their work was not at all one-sided: in addition to normal buildings were small bridges and engineering structures which had benefited from the collaboration. There seemed little question of the engineer partner having to act as architectural assistant to avoid being an economic drag.

There may be a case for authorities in Britain examining their methods of distributing commissions so that such partnerships might be more possible.

INVITED COLLABORATION

The third level of relationship between architect and engineer—invited collaboration—is the most common, and seems likely to remain so. But to say that it is widespread is far from saying there are no fundamental problems to be studied so that it may be truly fruitful. The primary question would seem to be: When is collaboration to be invited? On the Continent, as in this country, it seems that in practice the moment is usually too late.

The Exhibition Hall in Turin, with which Nervi was concerned, though exciting in many respects, falls into the category of potentially great buildings which suffer from this misfortune. Even Nervi's genius cannot disguise the fact that his job was to roof a predetermined plan-form rather than to collaborate in the whole design of a building calling for great spans and clear floor space; architecture and engineering are clearly not an integrated expression.

This sort of "collaboration" varies only in degree from the widespread practice of architectural plans being almost finished and then sent to various engineering firms for competitive prices, based on steel construction, reinforced concrete and, now, prestressed concrete. Under such a system, materials and their structural principles are not known until a tender is decided upon, and then the "design" is mutilated to suit them.

The causes underlying such divorce of the building-team members are several, and some of them profound. It would be presumptuous to suggest remedies here, but the authors feel strongly that the professionalism which has grown up and obscured the act of building is largely responsible.

Fruitful invited collaboration depends initially upon correct attitudes of mind on the part of the architect and the engineer—structural engineering is much more than making a "design" stand up, and design much more than adding decoration and icing to the cake. Further, there must be understanding of each other's fundamental, specialist principles. For example, many students are able to calculate the deflection of a beam by a variety of methods without having any real understanding of how a framed structure works. Similarly, a conventional study of architectural history is insufficient to provide the young engineer with a sound understanding of architectural principles.

MODULAR CO-ORDINATION

Lessons of a Current Belgian Experiment Described

PROFESSOR HUGO VAN KUYCK, OBE, a Belgian architect, gave a paper on "An Experiment in Modular Co-ordination at Antwerp," at a meeting of the Modular Society, held at the Royal Society of Arts, London, earlier this year, and from which we take the following extracts.

THE CHAIRMAN (Mr. David Carter) introduced Professor van Kuyck saying that he was engaged as an architect in a number of projects, one of which was a building development in Antwerp involving the erection of a number of buildings, and which was a long-term job. As one building was completed, the lessons learned from it regarding the application of modular principles were applied to the next building, having thus been tested in practice. The entire project would not be completed for two years yet, so Professor van Kuyck's address was in the nature of an interim report: final conclusions could not yet be presented, but they would hear comments on what had been found practicable, of interest, and worthy of development in the later stages of the project.

PROFESSOR VAN KUYCK said he wanted to talk about modular co-ordination, but not in the form of final conclusions to be drawn on the subject, not, indeed, conclusions at all, but merely to give some information concerning the reasons for undertaking such an experiment in Belgium and the results achieved to date.

AN INDUSTRIAL NECESSITY

First, why modular co-ordination? Was it something intrinsically of interest to architecture or building? He did not himself think so. The idea had grown out of the necessity for industrialisation of the building trade. Even long before the war it had been realised in various countries that building methods were not at all up to date, and had failed to keep up with the improvements in production methods in other fields of industry. The methods then, and still, used in the building trade were already well perfected in the Middle Ages; considering the fantastic progress made in various production methods it was astonishing how far behind the building trade had remained. That situation could be traced to a number of reasons: generally speaking the simplest conclusion drawn was the one leading to the most improvement; it was realised that what made building so expensive was the terrific amount of labour that went into it. So the immediate conclusion was the necessity of discovering how to reduce the amount of labour that went into a building.

Study and analysis were made of the problem in Belgium, and, in 1937, three buildings were selected for study. Careful accounting of how the price of those buildings was made up was carried out—by price he meant industrial price, not the commerical price at which a building was sold, but the summation of all that went into those buildings in the forms of materials, energy and manual labour. Regarding materials, it was calculated how much raw material went into the building, that is, how much clay to make the bricks, ore to make the metals, etc., not how much finished copper or steel as sold on the market, but the basic raw materials.

In Belgium, a lot of timber was used in the building trade, and, as there was no significent local supply of good wood, that timber had to be imported. Apart from timber and a few other materials, Belgium could supply the building trade with its raw materials. The accounting showed that the timber going into the buildings under survey was costing between 4 to 5 per cent. approximately. All the other raw materials taken together amounted to approximately 1 or 1½ per cent. So all the materials together, including the heavy charge for the important timber, amounted to about 6 per cent. of the cost.

Next, the energy requirements were tabulated: by that he meant what was necessary to bake the bricks, to reduce the ores, and work done in the factories and on the building site, and for transportation. It was calculated that the value of that energy was approximately 3 per cent. of the price of the building. The remaining 91 per cent. of the price was labour: labour in all the activities of the factories, in transportation and on the building site. Obviously, therefore, if it cost 100 per cent. to build one building—volume or unit—then if labour costs could be reduced by half it would cost 109 or 110 per cent. to build two units. By far the most important item was to effect reduction in labour costs in order to reduce building costs.

PROBLEM OF COSTS

The problem of reduction of building costs had arisen in England and other countries, and Belgium had had to face the problem, too. Producers of new materials had approached architects and builders saying their products cost, say, 25 per cent. less than previously used materials and were as good, so why not use them? The materials were usually laboratory tested and gave good insulation, or were rot-proof, etc., but what they did not usually do, and what was not mentioned, was to reduce the amount of labour necessary to use them as compared with traditional materials. That was why those new products, though good and probably a little cheaper than the older materials, did not materially effect reduction in building costs.

When analysing for a reduction of labour, it was clear the first place to look was at the amount of labour absorbed in the prefabrication of items in factory and shop. However, it was known that in most factories and shops labour had already been fairly well reduced, because, generally speaking, industrialists were good at their job. Where labour had not been, and could not be, reduced was on the building site, mainly on account of the way in which building was tackled.

Now, how was the problem of building tackled? First, an architect was approached, and he designed the building. He himself determined, for reasons which were more or less valid, the dimensions of every item to go into the building. Next the plans, and the specifications added to them, were given to the contractors who were to build the building: at that stage is was already too late to do anything much about the reduction of building costs. The builder could do many things—he could make the building site as efficient as possible, he could organise and mechanise, etc., but really could do little towards significant reduction of building

costs, because in the plans drawn by the architect were already the major difficulties making that impossible.

Effective reduction in the price of building must be dealt with at the planning stage, incorporated in the actual planning by the architect. The problem had been approached in various places, and the conclusion of most of the people who had attempted to solve it was identical: that the architect should plan his building, using exclusively a number of industrially produced items, and that his plan—his conception or architectural composition—should be nothing except the assembling of industrially produced elements. A number of architects, of course, were not very happy with this perspective: why not? To analyse that, suppose an architect to be placed before a number of alternatives, and assume there are a number of industrially produced items with which he can compose his building, all of which have a basic dimension of, say, one inch. For example, a door would be a certain number of inches wide, and an alternative variation would be the same width plus one, two, three or four inches; and similarly for height.

AMERICAN STUDY

Most architects would agree perfectly well with an industrial system of that sort; if they thought variations of an inch insufficient, a half inch could be used. On the other hand, industrialists would require as few variations as possible. If it was proposed to an architect that he should carry out the composition of a building with items of which the dimensions increased by one foot—take the door again, the first width two feet, the next three feet and another four feet—then the architect would be less happy, because four feet is too wide, one foot too narrow, and neither two feet nor three feet are very happy dimensions for doors. It is, therefore, not a matter of principle for the architect to compose with industrially predimensioned items so much as it is a matter of agreeing between architects and industrialists what variation of dimension would be commonly acceptable. That problem has been approached by various countries; as you know the Americans have made an extremely interesting study upon it, through the Producers' Council and Association of Manufacturers.

At the request of Mr. Beamish, the founder of the Beamish Foundation at the Massachusetts Institute of Technology (a research foundation for building techniques) an inquiry into this matter was started. The Americans made a thorough study of the problem; they called this increase of dimension the "increment of dimension," and their analysis led them to determine that four inches would normally be an acceptable increment of dimension in the building trade. He did not wish to go into the details of that conclusion at present, but that was the conclusion they reached. During the war, when they were practically cut off from all outside information, the Swedes made a thorough study of the same problem, and reached a very similar conclusion entirely independently; they found ten centimetres to be the normal increment of dimension applicable to items in the building trade.

Why is it necessary to determine such an increment of dimension beforehand? Why not simply standardise all elements which could be industrially prefabricated without keeping in mind any special increment of dimension? One reason entirely peculiar to the building trade was that it left the architect a large mount of freedom in using the various items industrially produced. Those items had to be dimensionally interchangeable; it was essential that a unit of wall, a window, a door, or a unit of floor should have dimensions which were interchangeable with each other, and the interchangeability required for those items that had led to the notion of a module. The word was perhaps not happily chosen, as it was already used by architects in another sense, but that could not be altered now. The notion of a module, which was really an increment of dimension, of about 2¼ to 2½ inches (ten centimetres) or 4 inches, was a notion arrived at automatically from considerations relating to industrialisation of the building trade.

The Americans were convinced that when the problems of the building trade were worked out completely, the notion of the appropriate module would develop naturally, and it would lose the artificial character it now had; they were convinced this new idea was the best method of approach to industrialisation of the building trade to achieve reduction of costs.

A COMPLICATED INDUSTRY

Of course, the problems in the building trade were more complicated and difficult to solve than those in other industries, and it was therefore necessary that some rather arbitrary decision on the choice of the module should be made in order to enable further investigations of the problems involved to be made. That was the reason for Belgian legislation a couple of years previously prohibiting standardisation of any new item in the building trade by the Belgian standardisation office unless it complied with a module of ten centimetres. The actual module was for the moment completely immaterial, whether ten centimetres of four inches was used depended mainly on the system of measurement in use: applications of the conclusions drawn from one module would be identical with those drawn from another system. It should be emphasised that the selected module was not at all a final decision; everybody would be quite prepared to revise it if necessary in five to ten years time. They considered that module only as a preliminary approach to the problem, because actually few items in the building trade were used simply with the dimension of the module; they used it in the form of what were called "preferential multiples" of the module. Taking a door as example, doors were made 70, 80 and 90 centimetres wide. Ninety centimetres was approximately 3 feet: 60 centimetres, about 2 feet, was too narrow and one metre too wide. So in the modular standardisation of doors 70, 80 and 90 centimetres had been accepted. Likewise, two heights had been accepted—2 metres and 2.10 metres. As a result of that application of the modular system, practically only six types of door were produced, and of those six, more than half the doors produced were 80 centimetres wide by 2 metres high. That preferential module was essentially a "use module," a "module d'usage": but when considering a certain module, a "module de construction," it did not necessarily coincide; what those two modules must have in common was that they must have the same basic agreed module, ten centimetres, which was what guaranteed their interchangeability.

In the experiment in progress in Antwerp they were trying—and that was one of their difficulties—to mix the traditional methods of building with the prefabricated industrialised method. That was necessary, unfortunately, because they had not yet enough industrialised items to make the buildings completely—the buildings were completely modulated, but it was not yet possible to take advantage of a complete modulation system to the full. Consequently, in the first building going up an entirely traditional structure was used: the skeleton in concrete, walls in brick, and a number of traditional items were used; but all the equipment going into the building was completely industrialised, that was piping, electricity, heating. A number of the other elements going into the building had also been industrialised—windows, doors, door frames, etc. That was as far as the experiment had been taken in the first building. In the second it had been taken further, and landings and staircases were prefabricated, and prefabricated concrete used. They were working towards complete prefabrication of all exterior and interior elements, and in the last building it was hoped that aim would be achieved.

NEW APPROACH NEEDED

In practice it had been found that the application of this modular system required an entirely new approach by the architect. The architect was a man who, through the study and practice of his art, was not trained in any form of industrial production, and it had been found that to have an architect design something and then hand that design over to an industrialist for expert industrial production afterwards was not a possible way of solving the problem; ideas such as industrialisation had to be incorporated into the project right at the very beginning. That was the reason for setting up a different system: instead of the normal procedure of the architect drawing plans and passing them first to the structural and equipment engineers and then the production industries, they had established a team, or group where all the various ideas were discussed by all concerned before plans were drawn, so that the production possibilities were already incorporated in the first plan. This was, perhaps, the most significant revelation; such preliminary discussion was essential to the success of industrialisation of building.

Professor van Kuyck went on to show a number of slides, and to comment upon them.

THE CHAIRMAN said it was evident Professor van Kuyck had great experience in the problems of modular co-ordination, although he spoke so modestly about "just starting a long-term project." The ground already covered by the experiment at Antwerp was far wider than anything attempted in Britain so far, not only in the physical size of the experiment but also the thought behind it. The project included two things the society had set itself to do: theoretical research into the principles which must be followed, and practical experimental work carried out in buildings which were not just laboratory projects but in actual use.

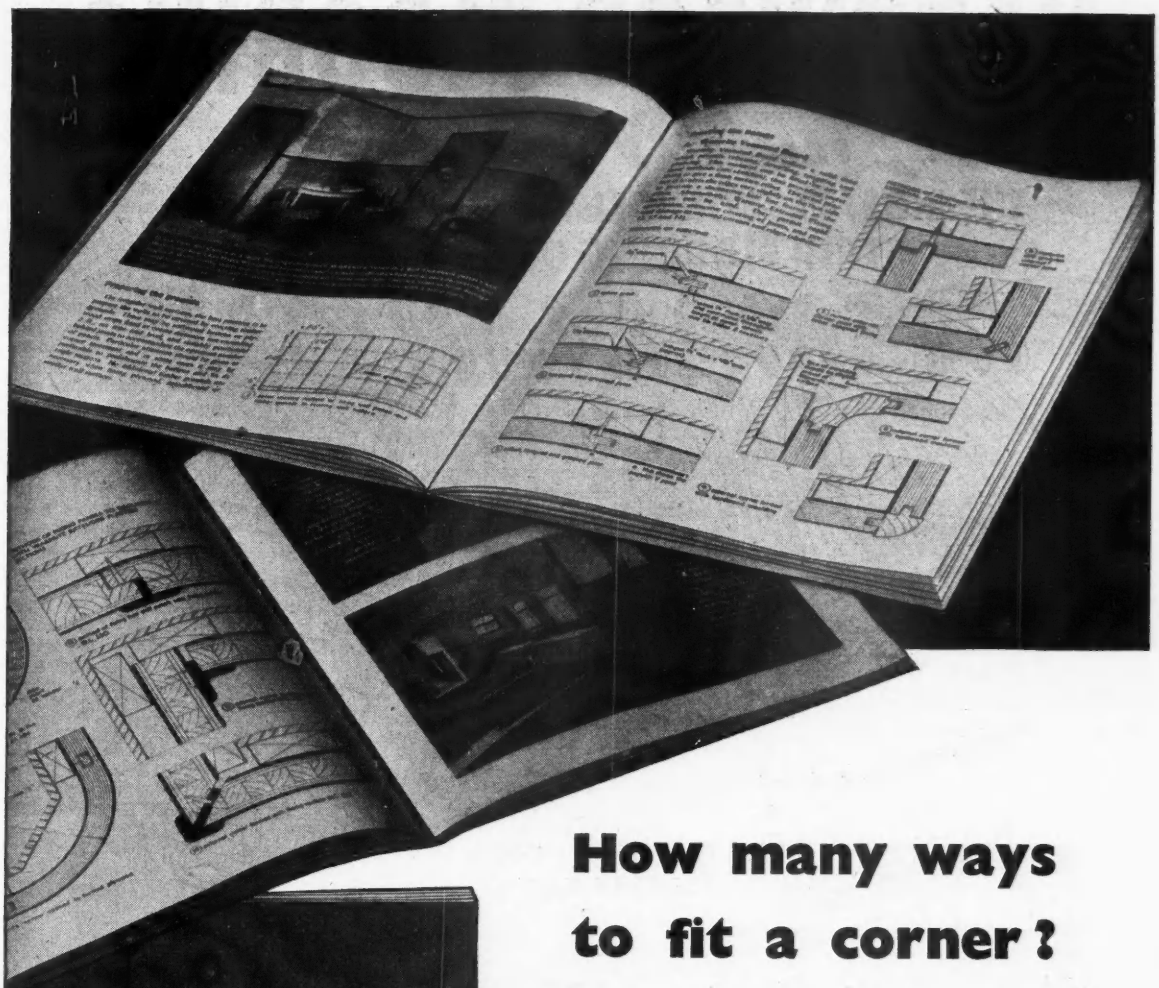
HOUSING PROGRESS REPORT

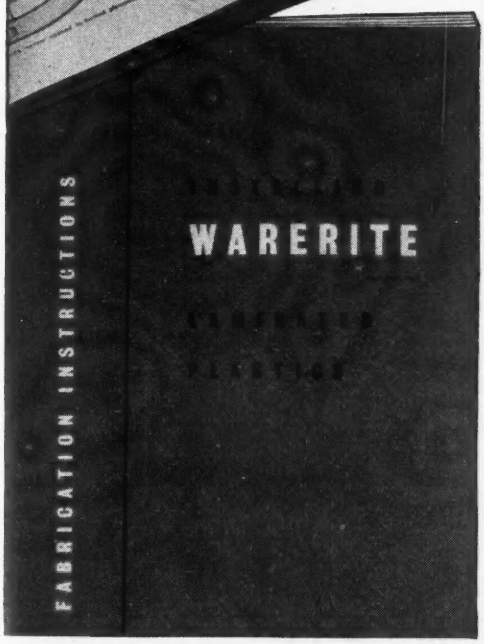
Figures for May

THE HOUSING SUMMARY, presented to Parliament as a White Paper * jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during May was 31,371 compared with 26,013 in May, 1953.

In the first five months of 1954, 136,722 permanent houses were completed compared with 118,706 in the same period of 1953.

* Cmd. 9194, Housing Summary, May 31, 1954. HMSO, price 2d.





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THE "UNI-BILT" BUNGALOW

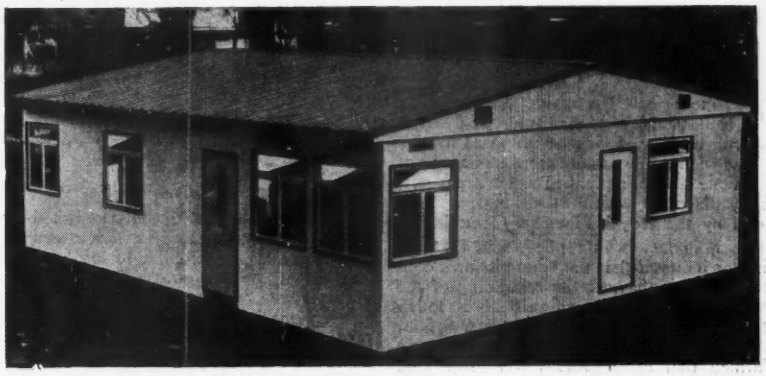
For Home and Abroad

A SYSTEM of fixing by means of steel clips which hold the sectional panels in place, is a feature of this prefabricated timber bungalow which is being produced for overseas and the home market by T. Bath and Co., Ltd., of Herne Hill, London.

In the development of the bungalow several important factors have been taken into account, such as speed of erection and dismantling and convenient packing for shipment abroad. It is hoped that the bungalow will be of value on large contracts where key staff have to be accommodated on site, and where the house will be required to be removed and re-erected. Prices for different versions range from £560 to £795.

Based on a 4 ft. module on a 4 ft. 2½ in. planning grid, the system of construction lends itself to alternative layout. The floor area is 750 super feet, with the three bedrooms and the kitchen each measuring 12 ft. 4½ in. by 8 ft. 2½ in.; the living-room is 12 ft. 4½ in. by 12 ft. 4½ in.; the hall measures 16 ft. 7 in. by 4 ft. and the bathroom and lavatory 8 ft. 2½ in. by 8 ft. 2½ in. Ceilings throughout are at a height of 8 ft.

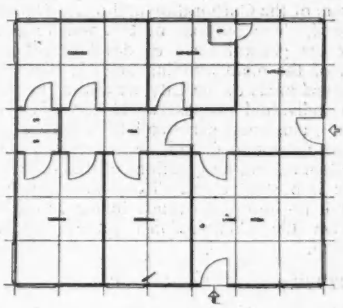
All the timber-framed panels are 4 ft. wide with internal faces covered by ⅜ in. plasterboard, and ½ in. vertical TG and V external cladding, backed with bitumen kraft paper. Four types of steel clips link the panels together and gable end beams are coach-screwed to the top of the end panels.



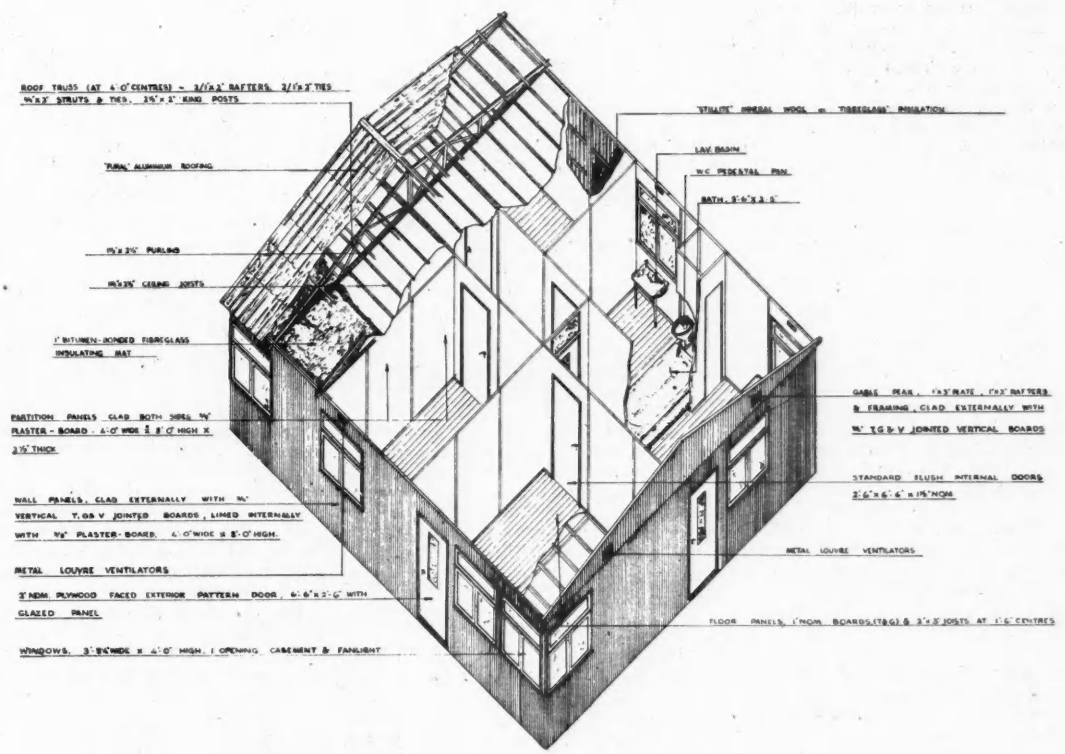
The floor, which consists of 3 in. by 2 in. joists with 1 in. T and G flooring, is laid in sections on dwarf walls or concrete raft with sleepers. The external wall panels are then erected on the floor and connected with the steel clips; junctions of partition panels are made as the work proceeds and the internal partitions follow.

Timber roof trusses at 4 ft. 2½ in. centres are supplied in two sections which bolt together and the tie beams carry the fixing fillet for the ceiling joists which are placed at 18 in. centres. Plasterboard sheets of ⅜ in. thickness are nailed to the underside of the joists with 1 in. bitumen bonded fibreglass quilting laid over.

At this stage the electrical system is installed, all cables being carried in the space formed at the junction of the panels.



Plan—A 4 ft. horizontal module on 4 ft. 2⅛ in. planning grid.


ROOF TRUSS (AT 4'-0" CENTRES) - 3"/2"x2" RAFTERS, 3"/2"x3" TIES
4"x2" STRUTS & TIES, 3½"x 3" KING POSTS
"FURAL" ALUMINIUM ROOFING
15"x 2½" PURLINS
1½"x 3½" CEILING JOISTS
1" BITUMEN-BONDED FIBREGLASS INSULATING MAT
PARTITION PANELS CLAD BOTH SIDES ¼" PLASTER-BOARD - 4'-0" WIDE x 8'-0" HIGH x 2½" THICK
WALL PANELS, CLAD EXTERNALLY WITH ½" VERTICAL T. GR V JOINTED BOARDS, LINED INTERNALLY WITH ¼" PLASTER-BOARD. 4'-0" WIDE x 8'-0" HIGH.
METAL LOUVRE VENTILATORS
3" NOM. PLYWOOD FACED EXTERIOR PATTERN DOOR, 6'-6" x 2'-6" WITH GLAZED PANEL
WINDOWS, 3'-8½" WIDE x 4'-0" HIGH, 1 OPENING CASEMENT & FANLIGHT
"STILITE" MINERAL WOOL or "FIBREGLASS" INSULATION
LAV BASIN
W.C. PEDESTAL PAN
BATH, 5'-6" x 2'-6"
GABLE END, 1"x 3" RAFTERS, 1"x3" RAFTERS & FRAMING, CLAD EXTERNALLY WITH ½" T.G & V JOINTED VERTICAL BOARDS
STANDARD FLUSH INTERNAL DOORS 2'-6" x 6'-6" x 1⅜" NOM.
METAL LOUVRE VENTILATORS
FLOOR PANELS, 1" NOM. BOARDS (T&G) & 3"x 2" JOISTS AT 1'-6" CENTRES

An isometric drawing showing details of the construction.

IN PARLIAMENT

Architectural Standards

ON June 29 MR. FREDERICK WILLEY asked the Minister of Housing and Local Government what action he proposed to take in view of the low architectural standards of the reconstruction of central urban areas now taking place to which attention had been drawn by the Royal Fine Art Commission.

MR. MARPLES, who replied, said that the Minister believed that the Commission's concern arose mainly over the rebuilding of the City of London; and he was already in touch with the Commission, the City Corporation, and the London County Council. He was informed that arrangements were instituted earlier this year for the City's planning consultants, Dr. Charles Holden and Professor Sir William Holford, who was also a member of the Commission, to meet regularly with officers of the Corporation and of the County Council. The purpose of this was to consider the general form of development for each of the main building units in the war-damaged areas of the City, as well as to deal with individual proposals. Under this procedure, close and early collaboration would, the Minister understood, be maintained with the Commission on questions of design in the more important cases. These arrangements would, he hoped, do much in the future to remove the Commission's present apprehension.

SCOTTISH DEVELOPMENT

On June 23, MR. PATRICK MAITLAND asked the Secretary of State for Scotland what representations he had received advocating a town development policy for Scotland.

MR. JAMES STUART said that representations had been received from the Scottish National Housing and Town Planning Council and the Town and Country Planning Association that the Town Development Act, 1952, should be applied to Scotland. The matter was at present being considered by the Clyde Valley Regional Planning Advisory Committee.

ESTATE DUTY

On June 28, during the Committee stage of the Finance Bill, MAJOR HICKS BEACH moved a new clause to provide that where real property was compulsorily acquired by any public authority within three years of the death of the owner and the compensation payable was less than the value assessed for estate duty purposes, the value for duty purposes should be the amount of compensation.

SIR REGINALD MANNINGHAM BULLER, the Solicitor-General, said it would be better to wait until Parliament could see the final form of the Town and Country Planning Bill before inserting this new clause. The Chancellor proposed to include in the Finance Bill next year a provision dealing with this matter, and it would be retrospective to the date when development value was abolished—November 18, 1952.

The new clause was, by leave, withdrawn.

THE BROADS

On June 29 MR. PARKER asked the Minister of Housing and Local Government what steps he proposed to take to prevent further deterioration of the Broads.

MR. MARPLES said that this would be a matter for the Minister only if the Broads were designated as a National Park; and although the National Parks Commission had discussed this with officers of the Department from time to time they had as yet made no proposal to that end. The Minister was advised that the cost of clearing the weeds and the silt would be very heavy; and he was not persuaded that it would be right to contemplate so major an undertaking.

EXCHANGE OF TENANCIES

On June 29 MR. SORENSEN asked the Minister of Housing and Local Government if he would issue a circular to local authorities further to encourage them to make arrangements for the exchange of tenants between one housing authority and another where this was necessary for reasons of health or employment convenience.

MR. MARPLES said that the Minister was grateful to the hon. member for his suggestion. He had received similar advice from the Housing Management Sub-Committee of the Central Housing Advisory Committee. The Minister consulted the sub-committee after the debate in Standing Committee C on the Housing Repairs and Rents Bill on the need for further legislative or administrative action to facilitate exchanges. The sub-committee were unanimous in thinking that it would be inappropriate to introduce an element of compulsion through legislation so long as ground was being gained all the time by goodwill. They had recommended him to send out a further circular about the end of September. He proposed to act on their advice.

NEW TOWNS' TENANTS

On June 29, MR. SORENSEN asked the Minister of Housing and Local Government if he would state the number and percentage of tenants in the new towns during the past 12 months who had given up their tenancies because of inability to pay the rents or who, for this reason, had requested transference back to the London area.

MR. MARPLES said that exact information was not available. The Minister understood from the Development Corporations concerned with the London new towns that the number was quite insignificant, something like 8 out of a total of 16,000 tenants housed.

CEILING HEIGHTS

On June 29 MR. JOHN HAY asked the Minister of Housing and Local Government how far the by-law specifying minimum ceiling heights of 7 ft. 6 in. was now generally applicable.

MR. MARPLES said that it was almost universally applicable, a very few exceptions having been allowed on special grounds.

BRUNSWICK SQUARE PURCHASE

On June 29 MRS. LENA JEGER asked the Minister of Housing and Local Government why he had refused to confirm the compulsory purchase order which the St. Pancras Borough Council had made on a site in Brunswick Square which was zoned as residential in the County of London Plan.

MR. MARPLES said that the cost of the land was too high.

HUTTED CAMPS

On June 29 COMMANDER MAITLAND asked the Minister of Housing and Local Government if he would fix a date after which no local authority might use wartime hutted camps to assist in discharging its housing duties; if he would consider increasing the allocation of houses and giving financial assistance to local authorities who still had to use hutted camps for housing purposes, in order to enable them to discontinue their use; and what steps he was taking to abolish the slums created by the continued use of wartime hutted camps for housing purposes.

MR. BULLARD asked the Minister of Housing and Local Government what action he proposed to take on the Third and Final Report of the Working Party on Requisitioned Properties in Use for Housing.

MR. MARPLES said that the Minister had already asked housing authorities to close down these camps as soon as possible. The number of families which had to be rehoused from camps was taken into account together with all the other relevant factors when settling a housing authority's programme. Houses built to replace hutted camps qualified for subsidy.

NATIONAL LAND FUND

On June 29 MR. CHETWYND asked the Chancellor of the Exchequer what was the balance of the National Land Fund; how much had been spent; and on what projects.

MR. BUTLER said that the balance at March 31, 1954, was £56,799,174. Since the inception of the Fund £906,881 had been spent. The following circulated statement showed the properties in respect of which payment had been made since mid-1952. There were 27 earlier cases:

PROPERTY	ACREAGE	TRANSFEREE
1. The High Close Estate, Ambleside	535	National Trust.
2. Stoke Wood and Stoke Hill Farm, near Exeter	196	Minister of Agriculture and Fisheries.
3. Mount Grace Priory, Northallerton, Yorkshire	10	National Trust.
4. Highstand Wood and Farm, near Carlisle	649	Minister of Agriculture and Fisheries.
5. Loch Alsh House, grounds and Cottage, Balmacara, Ross-shire	15	National Trust for Scotland.
6. "The Old Lifeboat House," Port Eynon, Glamorganshire	—	Youth Hostels Trust of England and Wales.
7. Parc Le Breos Estate, Glamorganshire	410	Minister of Agriculture.
8. Northchurch Estate (comprising three farms), Hertfordshire	371	National Trust.
9. Kildermorie Estate, Ross-shire	18,600	Secretary of State for Scotland.

WORKS MINISTRY STORES

On June 29 MR. RENTON asked the Minister of Works what was the total value of used and unused stores, respectively, held by or on behalf of his Department at the latest date for which figures were available.

SIR DAVID ECCLES said that on October 31, 1953, his Department held unused stores, including fuel and hutting, valued at £5,697,000 and used stores having a new value of £1,172,000. Since October, 1953, there had been a reduction in these stocks estimated at £1,100,000. These figures excluded certain small items and also materials and plant in building maintenance depots. In addition, his Department held large stocks on behalf of the Ministries of Health and Food and the Home Office. No other organisation held stores on behalf of his Department.

MR. RENTON asked the Minister of Works what was the present value of the land and buildings occupied by used and unused stores held by his Department; what was the number of staff required to protect and administer such stores; what was the annual cost of storing, maintaining, protecting and administering these stores.

SIR DAVID ECCLES said that it was not possible to give the capital value of the land

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and buildings used for his Department's stores, but the estimated annual rental value of the storage buildings was about £245,000. The staff required to operate these stores numbered 1,728 of whom 1,256 were in industrial grades. The present estimated annual cost of storing, maintaining, protecting and administering the stores held for his own and other departments was about £1,450,000.

THE SOUTH BANK

On June 29 MR. PARKER asked the Minister of Works what progress had been made in the granting of licences for building on the South Bank.

SIR DAVID ECCLES said he had received no applications for building licences for the South Bank between County Hall and Waterloo Bridge.

CEMENT SUPPLIES

On June 29 MR. CALLAGHAN asked the Minister of Works why he was reluctant to import cement from the Continent in view of the acute shortage in South Wales.

SIR DAVID ECCLES said that he had already asked the cement industry if they could improve deliveries in South Wales. The Minister of Works did not make, import, or distribute cement, but cement was on open general licence and could be imported by anyone wishing to do so.

REQUISITIONED PROPERTY

On June 29 MR. GOWER asked the Secretary of State for War how many properties were still held under requisition by his Department; if he would order a new investigation into the circumstances of each case; and if he would direct that prior consideration be given to the original owner, or owners, whenever a sale was contemplated.

MR. HEAD said that 683 properties were held under requisition under Defence Regulation 51. When no longer required, they were returned to the owners.

SCOTTISH HOUSING SUBSIDY

On June 29, SIR IAN CLARK HUTCHISON asked the Secretary of State for Scotland whether he would make a statement about the rates of Exchequer contributions to be paid for new houses completed in Scotland after June 30, 1954.

MR. JAMES STUART said that the recent White Paper on Housing Policy, Scotland, indicated that, in the interests of the general body of taxpayers, the Exchequer contributions could not continue indefinitely at the present rate. These contributions would normally be reviewed at this time to enable him to consider whether a draft order varying the existing rates should be submitted to the House and the recent fall in the Public Works Loan Board's interest rate would have been a factor in the review. He had, however, decided to postpone consideration of this question until the recommendations of the Sorn Committee on Valuation and Rating had been received and the Government had had an opportunity of reaching conclusions upon them. The present rates of Exchequer and rate contributions would therefore continue unchanged for new houses completed between June 30, 1954, and the date of the subsequent review.

VICTORIA-STREET POST OFFICE

On June 30, SIR HERBERT WILLIAMS asked the Assistant Postmaster-General if he would state how much of Christchurch-green, Victoria-street, SW1, would be occupied by the new post office; and what garage accommodation would be provided.

MR. GAMMANS said that only the site of the disused church and vicarage adjoining Christchurch-green would be occupied by the proposed new telephone exchange and public post office. There would be no garage.

SIR HERBERT WILLIAMS asked why it was that in this most congested area a new post office had been set up by the State with no garage accommodation, despite the fact that less than 200 yards away two private buildings had been put up, both of which would provide ample accommodation.

MR. GAMMANS said that this office would be a sorting office and there would be no need for a garage.

MR. HASTINGS asked for an assurance that the valuable open space which was so much used at present would not be built upon.

MR. GAMMANS said he could give that assurance.

CASH DISCOUNTS

Arbitration Award in Favour of Builders

THE award affecting Chelmsford builders on the subject of cash discounts has now been announced by the Eastern Federation of Building Trades Employers in the July issue of the Federation's "Builders' Bulletin." The following is the text of the Federation's announcement:—

The claimants were J. W. Gard (Builders), Ltd., and the respondents the Chelmsford Corporation. Our member was fully supported financially by our National Defence Fund and the results will benefit several Chelmsford contractors. The award of the arbitrator, Mr. Sydney Tatchell, CBE, FRIBA, was dated April 27, 1954, but the details we can release only now, since the award was in the form of a special case for the opinion of the court if either party wished to proceed further (which, in fact, they did not). The hearing was on February 9 and 10, Mr. Christopher Shawcross, QC, sitting as legal assessor, and the summary of the award given below will be of interest to all members. We would emphasise the limited nature of the reference and the fact that a full appreciation of all the factors involved can only be obtained from the award itself, which runs to nine pages:—

THE FACTS

1. Generally the Corporation from 1946 had pursued a bulk-buying policy for certain goods specially those in short supply needed for their housing schemes, with benefit to Corporation and contractor. The contractors' obligation was mainly transport from the Corporation's depot and risk of loss or damage on site.

2. In an earlier contract the contractor had obtained supplies in this way, there being pc items in the bills with 5 per cent. cash discount allowed under Clause 22 of the RIBA Standard Form of Contract which was used.

3. When tendering for and entering into the four contracts concerned in this case, the contractor was not informed that he would not be allowed 5 per cent. cash discount on goods from the Corporation's depot specified as pc items. In the bills there were items for pricing in respect of these goods relating to profit and carting, unloading and storage. These pc items were all described "delivered to Corporation depot," but to a builder this would only mean that the depot was the point of delivery.

4. The Corporation's architect did not nominate any suppliers in the four contracts other than those designated in the bills, nor did he inform the contractor that he could order elsewhere goods obtainable from the Corporation. The contractor collected goods from the depot on orders from the clerk of works.

5. The Corporation never debited the contract with the costs of these items from depot, and in calculating amounts due to the contractor only took profit, etc., into account.

CONTENTIONS OF THE PARTIES

(a) CLAIMANTS:—

In a conflict between conditions of contract and bills the conditions prevail. By conditions 22 and 24 (e) of the conditions of contract a 5 per cent. cash discount applies to all items on the ground that the Corporation were or in the circumstances must be regarded as nominated suppliers who had agreed to allow a discount of 5 per cent. Alternatively, the Corporation by their conduct agreed to vary the contract.

(b) RESPONDENTS:—

The bills must prevail over the conditions of contract. The contractor was not obliged to order the goods from the Corporation, but having done so without any express agreement to be allowed 5 per cent. cash discount, he was not entitled to the same, even if the Corporation were nominated suppliers within the meaning of condition 22.

DETERMINATION OF ARBITRATOR

The Corporation were never in breach of contract, since they were not obliged to nominate suppliers and except by the terms of the bills the Corporation never required the contractor to order their goods.

Special clauses in the bills do not disentitle the contractor from claiming cash discount from a nominated supplier.

The Corporation were nominated suppliers.

By failing to give notice before or after tendering that he was not entitled to cash discounts, and by accepting orders for goods without notice or warning before July 18, 1950, the Corporation by their conduct undertook or were stopped from refusing to pay the contractor these discounts.

On July 18, 1950, by letter the contractor was warned by the Corporation that he might not be entitled to any cash discount in respect of the goods in question. By placing orders thereafter without obtaining the Corporation's express agreement for discount, the contractor did this with his eyes open and at his own risk.

AWARD

"I AWARD that the claimants are entitled to and shall be paid by the respondents such a sum as represents 5 *per cent.* on the cost of all goods specified in the bills of quantities of the four contracts here in question as prime cost items to be obtained from the Corporation and which were so obtained by the contractor on orders given by him prior to July 18, 1950.

"I ALSO AWARD to the claimants the costs of the reference and of this my award and special case."

NATIONAL BRICKLAYING COMPETITION

Awards and Assessors' Report

THE assessors' awards in the National Bricklaying Competition, organised by the Institute of Clayworkers (of 23, Tavistock-street, WC2) to stimulate appreciation of good design and craftsmanship in brickwork and in the use of other clay building materials, have now been announced. The competition was open to all craftsmen, under 30, holding a City and Guilds Final Certificate in Brickwork or equivalent qualification in England and Wales. The design, drawing and practical work had to be the unaided work of the competitors.

The assessors were Mr. M. S. Whitehouse, for the Institute of Clayworkers; Mr. Cecil C. Handisyde, ARIBA; and Mr. J. C. Hodge, for the Guild of Bricklayers. Their awards were as follows:—

First prize (£50).—J. W. Field, of Enfield (name of principal and school where work completed, respectively: T. J. Drakeley, The Northern Polytechnic, London, N7).

Second prize (£25).—A. Shopland, Peas Pottage, Sussex (E. Crawford, West Sussex CC Sec. Tech. School, Horsham).

Third prize (£15).—R. W. A. Waite, Corringham (T. L. Morgan, Municipal College, Southend-on-Sea).

Highly commended.—P. F. Churchyard, Whitton (A. G. Webb, Twickenham Tech. College).

Assessors' Report

A summary of the assessors' report is as follows:—

We selected from the number of designs submitted ten finalists who were asked to build the work specified in their design. The subject selected was an opening in a wall surrounding an attractive public garden to take a 4-ft. wide brick-paved path, the opening not to be fitted with any door or gate.

The amount of interest and enthusiasm which this competition has aroused was most rewarding. A very great deal of time and trouble was expended by the ten competitors who were selected to complete their design. Every facility was granted to them by the principals, heads of building departments and brickwork instructors of the various technical colleges who made space available for the work to be carried out.

Throughout the competition a high degree of bricklaying skill was shown, and this was most refreshing: we consider that there was ample sign that the leeway lost when no instruction could be given during the war years is being rapidly overtaken.

All the designs were interesting, and some were very good indeed and showed a real appreciation of the use of brick and tile. There was, however, rather a tendency by some of the competitors to try to work in too many "features" into a small subject, and the more successful designs were those which relied on simple treatments and careful choice of material for colour and texture rather than trying to introduce a wide range of details, which tended to give a confused or "fussy" result.

It was noted that the response to the competition was rather greater in the south than in the north of England, although there were entrants from all over the country. In the event of the Institute of Clayworkers arranging for a further competition, we would recommend that special attention be given to publicity in the northern part of England in the hopes that more entrants from that part of the country can be attracted.

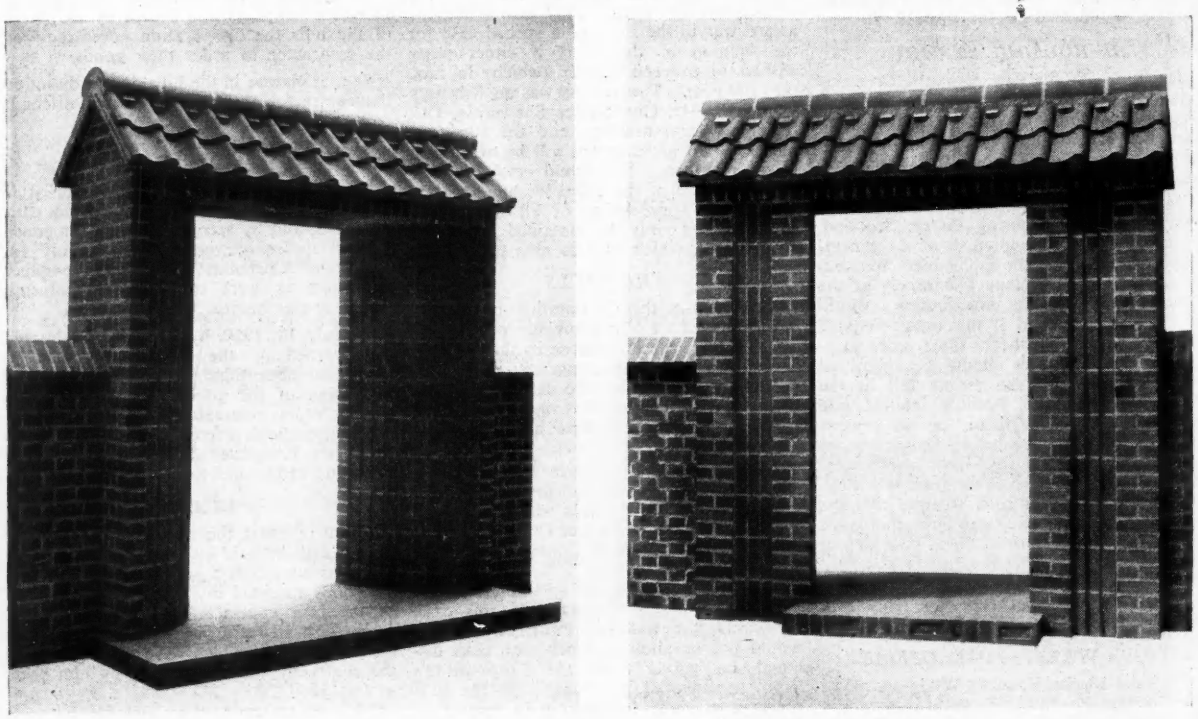
INDIVIDUAL REPORTS

The following extracts are taken from the assessors' individual reports:—

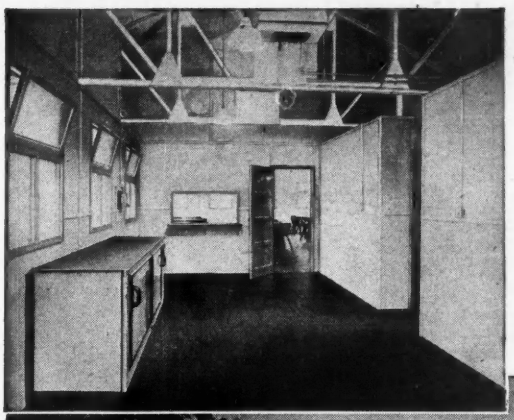
First Prize (J. W. Field): Here was a first-class design matched by first-class bricklaying. The main feature (a fan-shaped reveal in bricks on edge) was excellent, and the choice of pointing and jointing could not be faulted, although the effect could have been bettered if the darker brick border to the reveal had been 9 in. instead of 4½ in. The reinforced flat arch was well done, showing a soffit perfectly finished, and the single lap tiling on the coping was most pleasing. The pointing was not, perhaps, quite so "finished" as A. Shopland's [second prize]. The whole result was as good a bit of craftsmanship in brickwork as one could wish to see.

Second Prize (A. Shopland): Another simple design which came off well. The design of the gable over the opening was a little heavy: reinforcement of the flat lintol in front of the arched opening would have been better than the use of an unsightly supporting bar. The bricks were laid well, and the careful choice of slightly contrasting headers in Flemish bond was exceptional, and the result showed a high degree of craftsmanship, and one of the most delightful pieces of brickwork in the competition.

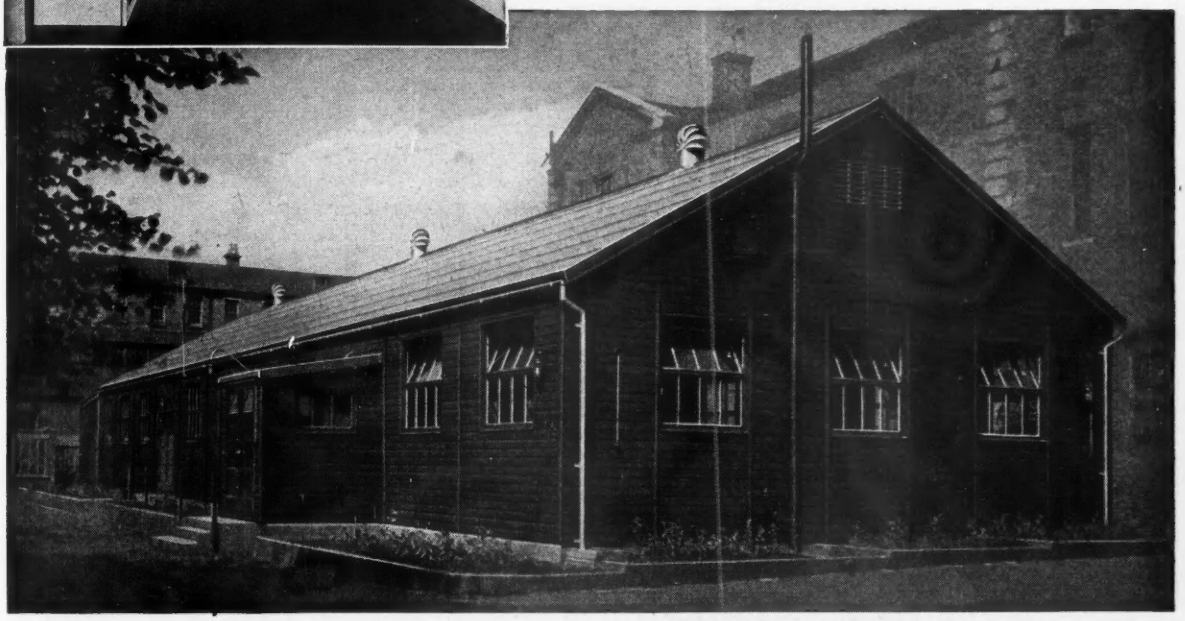
Third Prize (R. W. A. Waite): Another sound and straightforward design, well carried out. The straight vertical joint immediately above the arch on either side of it was a somewhat weak feature, and could have been bettered with some relief in contour. The use of a smooth-faced tile on the capping somewhat detracted from the appearance of the finished work. But the whole exhibited a high degree of craftsmanship, a credit to the competition.



Front and (right) reverse of the winning design executed by Mr. J. W. Field in the National Bricklaying Competition.



Wide-span timber buildings



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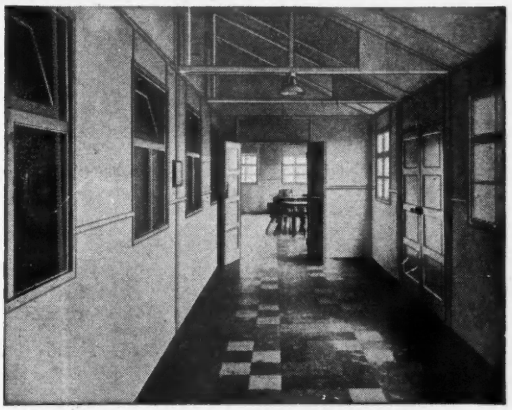

(CENTRE) Nurses' Recreation Room, 30′ span x approx. 100′, for Paddington Hospital, London. Illustration shows how porches or lean-to extensions can be easily arranged. (Photo : courtesy Paddington Hospital Management Committee.)

(INSETS) These show Hall's prefabricated partitions and standard lining to walls and underside of roof. (Photos : courtesy No. 10 Group B. Wakefield Hospital Management Committee.)

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Reconditioning of Housing Property

A PAPER AT THE ROYAL SANITARY INSTITUTE CONGRESS

SOME of the general principles involved in the reconditioning of housing property and the legislation governing such work were discussed in a paper given by MR. R. J. ALLERTON, FRICS, AMIMunE, Director of Housing, LCC (until recently Housing Manager, Birmingham), on April 29, at the Royal Sanitary Institute's Health Congress. Following are extracts from his remarks:—

Whilst many local authorities are concerned as to the possibility of maintaining their housing efforts along the lines they have hitherto followed, this position is by no means universal, and some of the smaller authorities feel that they are now about to overtake their need to build new houses.

In some areas, particularly in the large cities and conurbations, authorities are becoming increasingly concerned with problems connected with the shortage of land within their boundaries; the sprawl of towns; travelling time to and from work; the availability of labour suitable for new housing work; the under-occupation of existing dwellings, and last, but by no means least, finance. I do not believe that any of these problems are as yet regarded by such authorities as being insoluble or that these councils would willingly slow down on their programmes of building new dwellings.

But looming largely over the whole picture is the increasing recognition of three important factors. *First*, there is the realisation that many of our larger houses are no longer satisfactory for single-family occupation and that, unless they are made suitable for multiple family use in a proper and adequate manner, they will be occupied in a way we do not desire and of which we have adequate proof from our past experience. *Secondly*, there are very many people, living, it is true, in separate houses of their own, whose accommodation is far below present-day standards in amenities and comforts and for whom little is done to improve their lot. They spend their lives in these conditions, and the knowledge that so many younger people obtain up-to-date accommodation does little to add to their contentment of mind. Often older houses cannot be so adapted as to produce all the desirable features of new dwellings, and there are those who say that they should be pulled down "without delay" and new houses built in their places, but this suggestion cannot, in the main, be taken seriously because we all know that clearance and redevelopment is a very long job indeed.

What therefore is to be the fate of people living in houses which are not bad enough to be classed as slums but are very much lacking in the amenities of modern life? Are they to wait long years whilst we wipe out our waiting lists and clear our slums? If so, then most of them might as well abandon hope now. On the purely material side, are we to do nothing to prevent these houses from becoming rapidly wasting assets? *Thirdly*, we are worried about the too rapid deterioration of large numbers of single-family working-class sub-standard houses and the effect on the comfort of the tenants; we fear that unless we take immediate steps we shall, ere long, have on our hands a slum clearance problem which may be beyond our power to control or which, at the very least, will demand such a large proportion of our resources that we shall have to neglect our new house-building programme to a disastrous extent.

It is with these problems in our minds that we have to view the question of reconditioning and conversion. I feel that if we make sure that as far as practicable these operations will not interfere with new house building and that they will not be made an excuse for perpetuating houses which, because of their age and general conditions, ought to be demolished, we shall see a far greater enthusiasm for this work than has hitherto been the case—provided that the financial burden is not allowed to fall too heavily on local resources.

For the purposes of this paper I am regarding the term "reconditioning" as including "conversions" and as applying to properties in the foregoing three classes, namely: (1) out-of-date larger-type dwellings, (2) smaller single-family houses lacking in modern amenities, and (3) sub-standard houses.

OUT-OF-DATE LARGER DWELLINGS

We all know of the existence in our areas of once fashionable houses (large by present-day standards) which could be converted to accommodate additional families in comfort. Often these are structurally sound, have good gardens, are using existing roads and services, and they are often much nearer places of employment than are the new housing estates.

These houses are no longer popular with the class of person for whom they were built because they are hard to run in these days of servant difficulties and they are expensive to maintain structurally as single-family units. Also they are often to be found in areas which are themselves no longer attractive as good residential districts.

The result is that they are often let off in undesirable ways, they become drab and uncared for in appearance and are no credit to the town in which they are situated. They are on their way to becoming the slums of the future. Yet there can be no doubt that they are capable of conversion into multi-family dwellings, residences for aged persons or hostels for single persons. Not all such houses should be put to these uses, as there are cases where the land they occupy can be put to far better use if cleared and developed with new blocks of dwellings.

Whenever it is reasonably possible to do so, these houses should be turned into flats which should be entirely self-contained, each with its own front entrance and the garden suitably divided. Where only three or four flats are involved it is better, in my view, for the hot-water supply and space heating to be separate for each dwelling. Quite often the placing of the ventilated food store, coal store and dustbins is a source of trouble which the ingenious will overcome. This work can be undertaken both by private persons and by local authorities.

LOCAL AUTHORITIES' POWERS

Let us consider first of all what action may be taken by a local authority wishing to acquire larger-type dwellings for the purpose of converting them into flats.

Section 72 (1) of the Housing Act, 1936 (omitting references to "working classes" which were deleted by the Housing Act, 1949) says: "A local authority may provide housing accommodation . . . by altering, enlarging, repairing or improving any houses or buildings which have, or an estate or interest which has, been acquired by the local authority. Any such powers as aforesaid may, for supplying the needs of the district, be exercised outside the district of the local authority."

Section 72 (2): "The local authority may alter, enlarge, repair or improve any house so erected, converted or acquired, and may fit out, furnish and supply any such houses with all requisite furniture, fittings and conveniences."

Section 72 (4): "For the purpose of this part of this Act, 'provision of housing accommodation' includes the provision of lodging houses, and separate houses or cottages containing one or several tenements and, in the case of a cottage, a cottage with a garden of not more than one acre."

Section 74 (1) on the question of acquisition says: "Land for the purposes of this part of this Act may be acquired by a local authority, or they may be authorised to purchase land compulsorily for those purposes by the Minister."

Land is defined by Section 3 of the Interpretation Act, 1889, to include "messuages, tenements, and hereditaments, houses and buildings of any tenure."

It will be seen, therefore, that there are powers for a local authority to acquire these larger-type houses compulsorily and to convert them into flats, but the consent of the Minister is necessary. It should be noted that these powers apply not only to vacant but to occupied dwellings also. The facility with which the consent of any particular Minister would be forthcoming would no doubt depend to some extent on whether the policy of the day is to place the emphasis for housing work on local authorities or the private developer.

Dwellings to be provided under the foregoing provisions do not attract financial assistance under the Act of 1936, but they could properly form the subject of a claim by the local authority for grant purposes under the Housing Act, 1949.

WORK BY PRIVATE OWNER

Section 20 (and those following) of Part II of the Housing Act, 1949, are designed to assist the private owner financially in this work of providing dwellings by means of conversion, but little use has been made of them. It would seem that in the official view the reason for this is partly lack of publicity, but it may be that there are other contributory causes, and indeed the Housing Repairs and Rents Bill seeks to modify the 1949 Act in certain directions.

The 1949 Act is held by some to be unduly complicated and restricted, and some comments on this matter may not be out of place. These may be mentioned by reference to the main provisions of the appropriate sections. (1) It is necessary to ensure that the dwellings so provided shall have a satisfactory life of 30 years, although in certain circumstances the Minister may approve a departure from this rule. (2) Before a scheme can be considered by the local authority, considerable information has to be submitted to it by the owner, including plans of the building as it exists and plans and specifications of the proposed works: this entails considerable expense before the scheme can even be considered. (3) The house has to comply with rather stringent standards of fitness before the conversion can be put in hand, and this may involve the owner in expenditure quite apart from

the works of conversion, and no grant is payable in respect of it.

(4) The maximum rent for the dwelling has to be fixed by the local authority, and this is not known to the owner until after he has incurred expense in connection with the preparation of the scheme. (5) An owner, having received a grant, must keep the house at all times available for letting (unless occupied by himself or his family or his successor in title). Failure to do so appears to entail a refund of the grant or a proportion of it *on demand* by the local authority. (6) Generally, no application for a grant can be considered unless the amount to be expended on each dwelling is not less than £100 or more than £600. (*Note*: These amounts have been amended by Statutory Instrument 1952 No. 1819 to £150 and £800 respectively.) (7) From the local authorities' point of view there may be hesitancy in approving schemes for 30 years on the ground that the comprehensive development of an area may be hindered thereby. The period of programming for planning under the Town and Country Planning Act, 1947, is 20 years.

The amount of grant which the local authority is authorised to make for works of conversion may be such fraction of the approved expenditure as the local authority may decide but not, generally speaking, exceeding one-half. This sum may be paid on the completion of the work or by instalments as the local authority may decide. The Minister will repay to the local authority a sum equal to three-quarters of the annual loan charges of the grant for a period of 20 years.

The Housing Repairs and Rents Bill seeks to amend the 1949 Act in certain respects, and so far as conversions are concerned the main effects are that a building need not have an anticipated life of 30 years but it may be a much shorter period at the discretion of the local authority; whilst the maximum grant payable must not exceed £400 (except in such circumstances as may be approved by the Minister), the upper limiting amount which may be spent is no longer defined, i.e., the amount of £800 does not apply. The lower limit of £150 still remains although attempts are being made to get this reduced.

Whether the provisions of the 1949 Act as amended by the new Bill will be more attractive to private owners remains to be seen, but it is reasonably certain that the extent to which such works will be carried out can be very much influenced by the attitude of the local authority. There can surely be no doubt that it will be in the general interests of house-seekers if the pool of available housing can be enlarged from this source.

SINGLE-FAMILY HOUSES

Ministry of Health Circular 90/49 on the operation of the 1949 Act stresses the point that work on improvements which make no contribution to the solution of the general housing problem should not be allowed to interfere with the new house-building programme of a local authority. Yet it must be clear from the fact that the Act became law that even then it was envisaged there was scope for improvement works, but I am confident that this will increasingly be the position.

Where the 1949 Act deals with powers and grants in connection with improvements, the term covers works intended to improve existing houses as well as those designed to provide additional dwellings. There will therefore be no need to repeat here the details given under the preceding paragraphs of this paper dealing with the larger-type dwellings.

The kind of work covered by improvements, as distinct from conversions, includes not only additions to existing dwellings to increase living or sleeping accommodation and bathrooms, but also the provision of up-to-date cooking and heating appliances, hot-water services, separate kitchens, coal stores and so forth.

IMPROVEMENT WORK BY LOCAL AUTHORITIES

These works of improvement may be carried out by local authorities to properties they already own or which they may acquire for that purpose. However, it should be noted that grants are not payable for the improvement of houses where Exchequer assistance is already being paid.

SUB-STANDARD HOUSES

Contained in the various housing, public health and local acts and by-laws are various standards designed to assist local authorities to decide whether or not houses are fit for human habitation. For the purposes of this paragraph it should be assumed that substandard houses are those which by reason of their age, condition, amenities and congestion on the site, should be regarded as slum property, and demolished.

All houses wear out and otherwise become unsuitable for dwelling purposes sooner or later, consequently the work of slum clearance will always be with us. If we are to do our work properly we shall always be clearing obsolete houses and replacing them with new. It is clearly the opinion of the Government that the time is opportune for us to take up this work again where we had to leave it in 1939.

Unfortunately, due to various circumstances, the number of dwellings which ought to be demolished at once is much in excess of what it was before the war. So much so in fact that it is clearly beyond our resources to secure their removal immediately, and in very many places the work of clearing even those houses which are now unfit, will take years. The rate at which clearance can take place is conditioned by the rate at which new houses can be provided for displaced occupants, having regard to the local authority's other housing commitments.

It has always been recognised by local authorities that in slum clearance work, as soon as it becomes known that houses in a certain area are likely to be condemned, it is very difficult indeed to get any repairs done at all and the living conditions in such houses rapidly become almost insupportable. Because of the volume of slum clearance work to be carried out and the conditions under which the people in these areas have to live, it has become clear that some attention must be given to the temporary repair of those houses, and clearly the local authorities are the best agency to deal with it. This fact has for some years been recognised in Birmingham, where the city council were not content to allow tenants to live in such bad conditions while their extensive redevelopment programme was being carried out.

The wisdom of this course has been recognised nationally and the new Housing Repairs and Rents Bill is intended to make it possible for all local authorities to follow a similar course.

Not unnaturally, doubts arise in some minds as to the consequences of acquiring slum properties and repairing them pending demolition. Is it right that local authorities should become slum landlords? Slums are a national problem, a menace to the health and well-being of the community, and the local authority is more likely to undertake the financial responsibility of their removal than the private owner. I have no doubt in my mind that the better to secure their demolition slum areas should be taken over by the local authorities who did not create them and need not be ashamed of owning them temporarily.

They would have far more reason to be ashamed if they left unfortunate people to endure these conditions for years whilst they dealt gradually with their slum clearance schemes. Is it not a risky thing to repair bad houses like this? Perhaps it would be, under normal conditions, but surely it is far more important to give some additional comfort to the tenants than to be bound by some theory far removed from realities. Will not their repair be made an excuse for their retention long after they would otherwise have been removed? This would be entirely opposed to the declared intention of the Minister, and despite our national inclination to be "again the Government" we must not carry this too far or we shall never accomplish anything at all.

WATER SUPPLIES

Minister Calls for Co-ordination

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, is anxious to see a speeding up of co-ordination in the country's water industry. Speaking at Bournemouth on July 1 at the annual dinner of the British Waterworks Association, his Parliamentary Secretary, MR. ERNEST MARPLES, said: "The Minister wishes me to say an especial word of encouragement and thanks this evening to those of you who have worked and are working for the formation of Joint Water Boards. The White Paper on a National Water Policy issued by the Coalition Government in 1944 mentioned, as a source of weakness, the multiplicity of water undertakings. In the ten years since then, the number of undertakings has been reduced by only 200 and there are still nearly 1,000. He believes that, before we can pride ourselves on having a fully efficient water industry, there must be substantial regrouping so as to form undertakings which are large enough and financially strong enough to secure the highly skilled advice and supervision which are now necessary to ensure ample and reliable supplies of pure water.

"The Minister hopes that during the coming year, the smaller undertakings, in particular, will examine, with all energy and seriousness, the possibility of combining with their neighbours and that the larger undertakings, in so far as their help is needed, will also co-operate.

"The Minister has also asked me to tell you that he intends in the autumn to revive his Central Advisory Water Committee and that he looks forward, as chairman of that committee, to regular meetings with some of you. He intends to invite the committee to appoint a sub-committee to advise him on all questions relating to the collection, collation and use of information about water resources, including the matters previously dealt with by the Advisory Committee on Inland Water Survey."

THE NEW INVESTMENT ALLOWANCE FOR INCOME TAX AND PROFITS TAX PURPOSES

By John Lymester

CLAUSE 15 of the Finance Bill, which has recently been published, gives details of the new investment allowance which is to be granted for capital expenditure, incurred after April 6, 1954, on the purchase of new assets.

An investment allowance of 10 per cent. of the expenditure incurred on the construction of a building or structure which is to be an industrial building or structure will be granted instead of the initial allowance, but this investment allowance, unlike the initial allowance, will not be taken into account in calculating any balancing allowance, or alternatively, balancing charge. It will also be made in those cases where the old mills and factories allowance is still granted.

An investment allowance equal to 20 per cent. will be granted instead of the initial allowance in respect of expenditure on the provision of *new* machinery or plant.

It should be noted that the allowance applies only to new machinery or plant and, consequently, the allowance will not be granted for used or second-hand machinery or plant and will only be granted as and when the expenditure is incurred and, therefore, for machinery or plant acquired on hire purchase terms the allowance will be governed by the dates when the deposit and instalments are paid.

The old initial allowance will continue to be granted in respect of used or second-hand plant and machinery.

The investment allowance again will not be taken into account in calculating the written down value for future annual allowances, or for balancing allowances or balancing charges.

In certain cases capital expenditure on new assets has been allowed as a deduction in computing taxation profits because such expenditure has been treated as on the "renewals" basis. Despite this treatment the investment allowance can still be claimed.

AN IMPORTANT PROVISO

There is one important proviso in this section, namely that in respect of road vehicles which are normally classed as machinery or plant, the investment allowance will *not* be made in respect of expenditure incurred unless they are of a type not commonly used as private vehicles and unsuitable to be so used, or are provided wholly or mainly for hire to or for carriage of members of the public in the ordinary course of the trade. Again, whilst private motor cars will therefore not qualify for the investment allowance although used for business purposes, they will still qualify for the initial allowance.

An investment allowance will also be made at a rate of 20 per cent. in respect of capital expenditure in connection with the working of mines, and so on; and in respect of scientific research expenditure on the construction of buildings or works or the provision of new machinery or plant, being expenditure in respect of which allowances under the provision in respect of scientific research are granted.

In all cases where the investment allowance is granted it is a tax free bonus and is not taken into account in calculating other allowances, as the initial allowance was.

The claim will have to be supported by a certificate stating that the expenditure was incurred on new assets and giving such particulars of the purposes for which the assets are to be used as show that an investment allowance falls to be made.

Investment allowance will also be granted for the purposes of profits tax.

PREVENTION OF EVASION

In the Second Schedule attached to the Bill are provisions for the prevention of evasion. Paragraph 1 provides that in the case of any capital expenditure which qualifies for the investment allowance, if any of the following events occur within a period of *three years* from the date of the incurring of the expenditure, then the investment allowance will be withheld or withdrawn, but in such cases, if there is no sale or transfer, the initial allowance will be granted. The events are as follows:—

(a) Any sale of the property representing the expenditure made by the person incurring the expenditure or an associate of his, where the buyer is a person not resident in the United Kingdom and not buying the property for a chargeable purpose or for scrap;

(b) any change of residence of the person incurring the expenditure or an associate of his whereby the purpose to which the property representing the expenditure is for the time being appropriated ceases to be a chargeable purpose;

(c) any appropriation of the property representing the expenditure made by the person incurring the expenditure or an associate of his to a purpose other than a qualifying purpose;

(d) any sale or transfer of the property representing the expenditure made by the person incurring the expenditure or an associate of his otherwise than to a person acquiring the property for a qualifing person, where it appears with respect to the sale or transfer that it is one in contemplation of which the expenditure was incurred;

(e) where, in the case of a road vehicle, the qualifying purpose requires it to be used wholly or mainly for hire to or the carriage of members of the public, any sale or transfer of the vehicle not made to a person acquiring it for a qualifying purpose or as scrap, and any appropriation of it to a purpose other than a qualifying purpose.

Paragraph 2 of the Second Schedule also provides that if the machinery or plant is sold and:—

(a) The buyer is an associate of the person who incurred the expenditure, or

(b) that with respect to the sale it is one in contemplation of which the expenditure was incurred, or

(c) that in respect of the sale the sole or main benefit which could have been expected was the obtaining of the investment allowance or initial allowance,

then the buyer shall not be entitled to the initial allowance.

Paragraph 3 provides that the person who is granted the investment allowance must notify the Inspector of Taxes if any of the following events occur:—

(a) The property in respect of which it is granted is sold by him or an associate of his to a person not resident in the United Kingdom, or the property being situated outside the United Kingdom is sold by him or an associate of his to any person; or

(b) the property is appropriated by him or an associate of his to a purpose other than a qualifying purpose; or

(c) where the property is a road vehicle, there is any sale, transfer or appropriation of it which falls within condition (e) above.

"Chargeable purpose" means the purpose of putting the property to a use such that profits or income accrue or are intended to accrue therefrom and will be chargeable to tax, and "qualifying purpose" means the purpose of putting the property to such a use as aforesaid, not being a use such that, if the property was or had been intended for that use when the expenditure was incurred, no investment allowance should have been made in respect of the expenditure.

This new investment allowance will be of considerable importance to industry. It must be remembered, however, that it is only in respect of new assets, and road vehicles will normally *not* qualify for the allowance.

NFBTE

Affiliation of Jamaican Builders

THE executive committee of the National Federation of Building Trades Employers has approved an application for affiliation to the Federation submitted by the Incorporated Master Builders' Association of Jamaica.

The total number of overseas organisations affiliated to the National Federation is now 13. The other 12 are: The National Federation of Building Trades Employers in South Africa; the New Zealand Builders' and Contractors' Industrial Association of Employers; the National Federation of Building Trades Employers in Rhodesia; the New South Wales Master Builders' Association; the Kenya Association of Building and Civil Engineering Contractors; the Jersey Building and Allied Trades Employers' Federation; the Guernsey Association of Building Trades Employers; the Dublin Master Builders' Association; the Belfast Builders' Association; the South Australian Builders' and Contractors' Association; the Gibraltar Master Builders' Association and the Victoria Master Builders' Association.

General Foremanship Studies

AT THE INVITATION of the City and Guilds of London Institute, the executive committee of the NFBTE has decided to nominate the following three representatives to serve on an exploratory committee to consider the introduction of a national scheme of examination in general foremanship studies: Messrs. F. S. Kennewell (Nottingham), G. I. Orchard (Stroud), and R. W. Whittington (Southampton).

USA ROAD DEVELOPMENT

"Pay as you ride" Theory

MR. DEWITT C. GREER, state highway engineer of Texas, told a London audience of highway engineers and industrialists, on June 21, that the successful development of modern roads in Texas was partly due to 75 per cent. of motor fuel tax receipts being spent on roads.

Mr. Greer, who was in London as the guest of the British Road Federation and the International Road Federation, was presenting a paper on "The Development of a Modern Highway System," at the Royal Empire Society. He had just completed a European lecture tour after receiving an award as America's outstanding highway engineer in 1953.

Road funds were derived totally from the road user, based on the theory of "pay as you ride." Out of the fuel tax of four cents per gallon, three cents went to developing and maintaining the highway system. The remaining one cent went to the State schools. Funds derived from the sale of licence or identification plates all went to the support of the road system.

Since 1940, Mr. Greer has supervised construction of 32,000 miles of new paved highways. The Texas highway department spends about $150m. annually on its highway system. Of this amount, $100m. goes on new construction and $39m. for maintenance.

SAFETY & THE UNIONS

Accident Prevention Group Meeting

AT the June meeting of the London Building and Engineering Contractors' Accident Prevention Group, MR. E. K. CLARKE, president of the London Regional Council of the National Federation of Building Trades Operatives, took up the cudgels on behalf of the trade unions, to contest the charge made at a previous meeting that they are more concerned with assisting their members to claim compensation after an accident has happened than they are with accident prevention.

Mr. Clarke contended that the pressing of claims for compensation is in itself an incentive to employers to prevent accidents happening, and for this and other reasons the trade unions are right in assisting their members in this direction.

As regards action to educate their members, he drew attention to a booklet published very promptly after the Regulations came into effect in 1948, as a "Guide to the Building Regulations," and to articles published regularly in the trade union journals.

Mr. Clarke spoke of the value of including items dealing with Safety on agendas for joint consultation committees, as was already done in the cement industry.

Co-operation between employers and operatives; education in safety at all levels; deterrents to prevent accidents happening, were the three lines along which Mr. Clarke felt that accident prevention should work.

He spoke of the difficulties operatives are faced with in complying with the Regulations under which they are required to report any defect in the scaffolding, plant or appliances without delay to their employer or foreman.

In the discussion that followed, Mr. Clarke made references to the appointment of agents or general foremen as safety officers in compliance with the requirements of Regulation No. 98. This is a matter on which there has always been two schools of thought.

Both Mr. Clarke and MR. W. D. SHORT of the Factory Department, felt that the need for completing the job quickly and cheaply could often conflict with the duties of the Safety Officer. MR. J. HAYWARD, of John Laing and Son, spoke of the arrangement in operation in their organisation whereby craftsmen are used as full-time and part-time safety officers. He agreed that safety cannot logically be a part-time job in the sense that a man cannot be safety officer in the mornings only, but contended that they had successfully dealt with this difficulty.

Mr. Hayward also said that site supervisors under consideration for promotion are expected to spend a period on safety supervision.

MR. ERNEST JONES, secretary of the NFBTO, spoke of the need for such a booklet as had been published originally by the trade union movement, and spoke of their willingness to co-operate with employers through the Accident Prevention Group to produce and circulate an up-to-date booklet.

Sub-contractors created difficult problems, and the importance of the main contractor realising his responsibility for co-ordinating the work of safety was emphasised.

At the conclusion of the discussion, a vote of thanks was moved by MR. W. D. SHORT. He spoke of the service that the Accident Prevention Group can give in talking to everybody concerned with safety, and he strongly supported the suggestion that a booklet for circulation to all employees be produced.

As regards Safety Officers, Mr. Short said that it should always be borne in mind that accidents are not confined to scaffolding. Whoever is appointed must be competent to assess whether those responsible for the inspection of scaffolding, plant, etc., are doing their job properly.

TIMBER RESEARCH, 1953

Progress at Princes Risborough

THE major project receiving the attention of the Forest Products Research Laboratory at Princes Risborough during 1953 has been, as in previous years, the testing and evaluating of new tropical timbers likely to be of importance to manufacturers and timber users. Another important function has been the satisfying of the increasing demand from the timber industry for data and advice on day-to-day problems. These two major charges on the resources of the laboratory, neither of which can be neglected, have resulted in some slowing up of long-term research work.

A development in kilning technique is the use of superheated steam as a drying agent. Although this has previously been used, chiefly in the drying of softwoods, knowledge of its use in the kilning of hardwoods is scanty. Tests on two lightweight hardwoods have shown that they can be dried by this method in about a third of the time taken by traditional treatment. The amount of checking and distortion is only slightly greater than that resulting from normal kiln drying, but collapse occurs to an appreciably greater extent.

The new process developed at the laboratory for making plywood corners of small radius has been of considerable interest to the furniture and other woodworking industries, and a successful innovation has been the use of low-voltage metal heating elements of large area for applying heat to the glue lines. The technique employed in making laminated bends of large section in boatbuilding is being investigated. Three laminated oak stems 9 in. by 5 in. in cross section of the type used for Admiralty harbour launches have been constructed. As a result of this work, a new type of bending jig has been made, and experiments are now being carried out in the use of radio frequency heating in the setting of the bends. The use of high softening temperatures in the bending of English oak has also been the subject of experiments. It has been found that immersion of the wood in water at boiling point before bending results in bends that are more satisfactory than those produced by treatment at any lower temperature.

WEATHERING

Weathering tests of plywood have been carried out, both in this country and in Nigeria, over a period of three years. The principal object of the tests was to assess the durability of the glues used in the manufacture of the plywood. Resins of the phenol and resorcinal types showed negligible deterioration, but others tended to fail in the most severe tropical exposures.

Studies of the common furniture beetle and the house longhorn beetle have been given priority because of their importance. The suitability of various timbers and plywoods for breeding and egg laying by the furniture beetle has been studied. The house longhorn beetle, a serious pest on the Continent, is found only in certain areas in this country, Surrey being the locality in which infestation is greatest. The laboratory is co-operating with the local authority concerned and with the servicing firm which is treating the infested houses. Experiments in the laboratory show that temperature and humidity are important factors in the hatching of the eggs and in the rate of larval growth.

Further information on the laboratory's work during the past year is contained in "Forest Products Research 1953," price 3s., obtainable at the Stationery Office.

CEMENT SUPPLIES

Outlook "Set Fair" for Further Expansion

AN APPEAL to all users of cement not to over-order or to hoard cement at the peak of the building season, was made by SIR DAVID ECCLES, Minister of Works, speaking at Malmesbury, Wiltshire, on July 3.

The British industry, he said, was producing more cement than ever before and the outlook was set fair for further expansion. But temporarily there were some areas, like Wales and Scotland, where supplies had been right. Anyone was free to import cement, so there was no need for stoppages of work, but imported cement cost about 30s. a ton more than British cement, and we all wanted to keep imports down. So it was up to all builders and engineers to economise and to do all they could to help the building industry to get through the summer without recourse to large imports.

Sir David added that the continuing increase in the volume of new buildings, which was reflected in the steady increase in demand for building materials, was a triumphant vindication of Mr. Macmillan's policy of freeing the building industry to get on with the job.

LMBA

Visit to Ministry's Oxford-street Exhibition

MEMBERS of the LMBA's maintenance builders' committee, headed by the chairman, Mr. R. F. Mansell, paid an official visit to the Ministry of Housing and Local Government's exhibition houses off Oxford-street after their June meeting.

The visitors, who were conducted round the exhibition by representatives of the Ministry of Housing, were considerably impressed by the display, and promised to encourage other members to visit it during the next couple of months.

At the close of the visit, MR. MANSELL said that the scheme offered London a real chance not only of keeping houses in use which would otherwise become derelict very soon and of bringing into occupation other houses which had been lost, but also of giving tenants of old houses the amenities of the twentieth century which, without the scheme to help them, would be outside their resources. He hoped the houses would be widely visited, not merely by builders who would do the actual conversion, but also by owners of property and representatives of local authorities, many of whom would find valuable lessons to help them in modernising older buildings. There were few boroughs in London which had not some houses crying out for reconstruction of this kind.

** By the end of last week more than 50,000 people had visited the exhibition houses, which remain open until the end of August.

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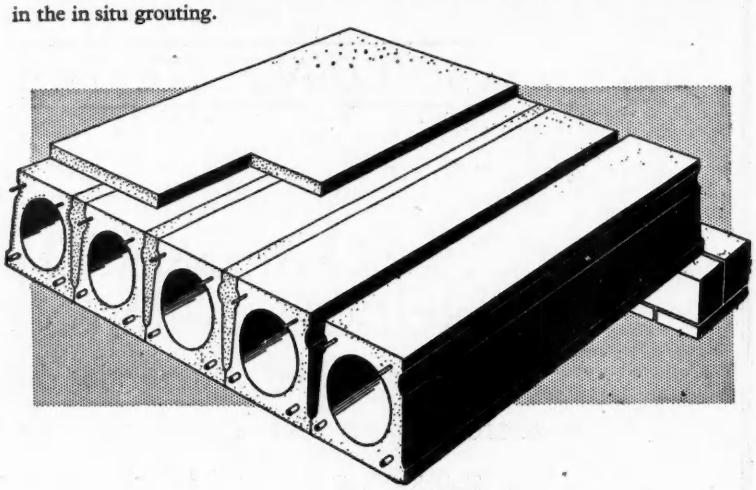

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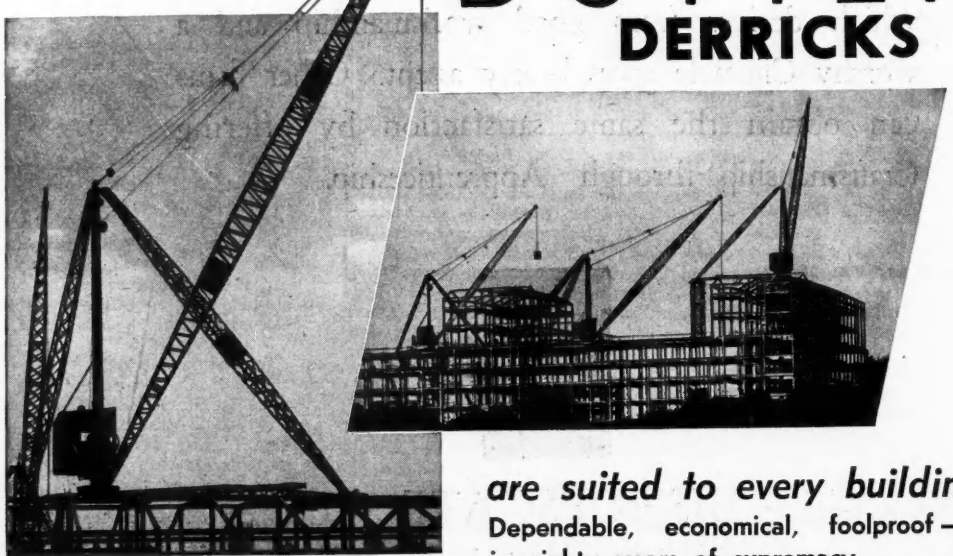

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Resettlement in New Communities

SOME OF THE PROBLEMS DISCUSSED

ALTHOUGH there are strong arguments in favour of building as many new houses as possible, as soon as possible, and for that reason concentrating as much building labour as possible on these projects, the other amenities should not be long delayed. This was the view expressed by MR. R. J. ALLERTON, FRICS, Director of Housing, LCC (at the time of the lecture housing manager to the City of Birmingham), when he read a paper entitled "Some Problems of Resettlement in New Communities," at a meeting of the Royal Institution of Chartered Surveyors earlier this year.

"The difficulties of settling down are so great," he said, "that, if it were feasible, I should prefer to see the order of building reversed." The following extracts are taken from Mr. Allerton's subsequent remarks:—

New tenants on some of our larger estates need the spirit of pioneers; usually not only are there no shops, churches, clubs, licensed houses, youth centres, and so forth available, but quite often roads, paths, public lighting and transport are lacking, which, added to the new atmosphere, new neighbours, lack of amusements, undug—and sometimes in these days of mechanical excavators—almost undiggable gardens, and high rents can, after the novelty of a new house has worn off, create an atmosphere of discontent which takes years to eradicate. It is as well to remember this because all these circumstances high-light the need for help and guidance from the local authority and private organisations in the early years of occupation.

Some of the problems frequently encountered when the time comes actually to move families can largely be avoided at the planning stage, and reference to one or two of them may not be out of place.

THE SIZE OF FAMILIES

Before any appreciable movement of families can take place there must clearly be dwellings into which to move them—an obvious comment which some people appear to be in danger of forgetting, and, what is just as important, those dwellings must be of a size suitable for the families who are to occupy them. Because sizes of families are not static and because policy on selection changes from time to time, it is not always possible to be precise in estimating how many houses of each size should be provided on a given estate, but the housing manager is able to make a reasonably intelligent estimate of this, particularly if the programme can be taken over a period of two or three years, because he can adjust his removals to fit in with the house deliveries. This question of house sizes need not, therefore, become a planners' problem because reasonable co-operation with the housing manager can avoid it to a large extent.

It goes without saying nowadays that in laying out a new estate or redeveloping an area, sites must be set aside for the provision of all the amenities which were mentioned earlier, and others as well. In these days of land shortage these provisions must not be unduly generous, but, on the other hand, the temptation not to provide them but to use the sites for houses must be resisted, otherwise we shall find ourselves repeating the mistakes of the inter-war period.

I believe that it is worth taking more trouble than is often the case at the sketch-plan stage of the preparation of a layout. Critical conferences of the officers concerned—architect, engineer, education officer, transport officer, housing manager, and others—should take place before the committee stage is reached, and many second thoughts, often too late, will be avoided. As a case in point, there are changing views on children's playgrounds—their size and equipment and location—and this matter is well worth discussion. There are those who hold that the social and architectural focus of the estate should be the school—a point of view to which I have never been able to subscribe—but it should either be agreed to or disposed of at the very earliest stage. The mistake should be avoided—and it can so easily be made—of putting an infants' school on the opposite side of a traffic road from that part of the site containing the highest proportion of large houses where normally the largest families would be found. Why is the siting of old people's houses somewhat of an afterthought so that they are often tucked away in queer places away from the life of the estate—which old people do not like—or provided on the road corners where the largest gardens are usually to be found? No, I am convinced that the sketch plan layouts should be critically examined by all interested parties and each should be willing to stand by the plan, in spite of the criticisms which will inevitably arise no matter how well-conceived the layout may be. But these suggestions seem so elementary that I feel I ought to apologise for making them.

There is, however, an observation I should like to make for which I feel I need not apologise, and which is of paramount importance where resettlement operations are in progress, and that is this question of rent. I never cease to feel sorry for the planner and the architect where finance is concerned, particularly in these days of high costs. We must remember that all our brave ideas on rehousing are based on a false premise if they do not result in greater happiness of the people who have to live in the dwellings we provide, and what man can be happy who is paying out so much by way of rent and rates that he has to deprive himself and his family not only of the admissible luxuries of life but often the necessities of life, too? That state of affairs has arisen before and it can arise again; indeed, I would say that in some cases it has already arisen. Why must all that flat land be used for other purposes, leaving all the steep bits to be developed at considerable cost for housing? Why must we cut our capital costs by stinting on the quality of our fittings and finishings, thus throwing a heavier burden on our maintenance funds? Do we always pay as much attention as we should to economy in layout costs? How frustrated the planner and the architect must often feel! But his frustration is not so great as that of the housing manager who cannot persuade his applicants to take the houses because of the high rents; and the frustration of the would-be tenant, who after many years of waiting finds that when at long last a house is offered to him he cannot afford it, is greater than that of anybody else.

In considering the planning of a new community, the question of densities must inevitably arise, and it brings with it the perennial discussion on the theme of houses versus flats. I do not propose to argue the point here, but would merely say that I remain quite unconvinced that flats are as good places to rear a family as are houses. On the other hand, I must accept the position that in certain circumstances we have little option but to build a certain proportion of flats. This, no doubt, is the case in large towns where we do not want our boundaries to expand further, but even then I believe that no large block of flats should be built until we are convinced of its necessity, and that the position should be kept constantly under review. If flats are necessary to help prevent the spread of towns, what is the logical argument for building flats in the centres and houses on the boundaries? If it is said that only a few blocks of flats are necessary, then why not build them on the boundaries near the parks and open spaces and not in the centres at all?

SAVING FARMLAND

Then there is the argument, produced in favour of flats, that we must save agricultural land, otherwise we shall starve. There is no doubt wisdom in this argument, but is it not in danger of being carried too far? If it is not, and every acre of agricultural land must be saved, is not this a perfectly sound argument for building blocks of flats instead of houses in our villages, and I wonder how many people would be happy about that? I am not saying that we should not have flats; I am sure that there is a need for them in certain places, but I do say that we must not be carried away by their architectural possibilities. Life in large blocks of working-class flats is a very different thing from having a house and garden of one's own, or even from living in a flat in a small block. These ideas are sometimes ridiculed, and it is pointed out that in the northern parts of the country people have lived in flats for years, but I am not sure that this proves anything—our ancestors lived in caves for that matter.

Flats are very expensive to build, and even with high subsidies the resultant rents are often too high to enable them to serve the purpose for which they are intended.

TRAVELLING TIME RECOMMENDATION

Builder's Claim Disputed

BECAUSE it is felt that a school building contractor should be expected to know the labour position, Worcestershire County Education Committee are to be recommended not to pay £778 in wages for the time taken by employees travelling to a site.

The sites and buildings sub-committee report states that the contractor for Crofton Primary School did not know the labour position when he tendered and assumed that a reasonable amount could be obtained locally.

The contractor, however, had to transport men daily from Smethwick and other places, the report adds. The extra claim for payment did not cover the cost of transport, "but only the non-productive time for which they had to pay under trade union conditions."

The sub-committee are recommending the payment of £525 to another firm working on Redditch-Studley Road Secondary Modern School on the ground that "they had to contend with exceptional weather conditions" through no fault of their own.

DEVELOPMENT IN BURMA

Industrial Delegation's Report

THE opportunities for the United Kingdom to contribute to the development programme of Burma are outlined in the report of the United Kingdom Industrial Delegation to Burma, which has recently been published.

Referring in particular to civil engineering and building contractors, the report states:

Generally speaking, the Government policy is to employ consultants and architects for their schemes and to put out each project to tender. Where an industrial joint enterprise is thought desirable it will be a matter for the company or corporation to decide what arrangements they will make. In some instances the undertaking may well call for turn-key offers, i.e., design and construction. We understand that on certain Government works too, where time is of exceptional importance, the Burmese may in fact call for a turn-key offer.

Contracts will largely be prepared by the consultants, and will no doubt be in a conventional form. It will be advisable, however, for contractors submitting bids to acquaint themselves with local taxation laws, both corporation and personal tax. Similarly, with regard to import and export regulations, particularly in connection with contractors' plant and spares.

We were advised that contractors should qualify in their tenders any such points as re-export of equipment and/or spares, and that such action would not invalidate their bid.

It is the intention of the Government to include a clause in all contracts whereby the contractor must allow for the training of Burmans. They well appreciate that it will be necessary for contractors to bring in a considerable number of their own technicians, but they are most anxious to take full advantage of the development programme and the presence of these technicians in training up their own personnel.

MATERIALS

A very considerable part of the development falls in and around Rangoon, which is unfortunate, as it is not blessed with unlimited supplies of indigenous materials, e.g., sand, stone or ballast, etc. There is every possibility of demand exceeding supply, and a consequential spiral in prices.

Some 60,000 to 65,000 tons of cement are produced in the country per annum, which quantity will not meet the demands of the construction programme. The handling and storage of cement need particular consideration in the monsoon periods. Timber, largely teak, is plentiful, but owing to difficulties to which we have referred, stocks released to the local market are not always seasoned or of good quality. With the general improvement of conditions upcountry, this situation should disappear.

Imported materials may be held up from time to time through congestion at the port. There are some very good and old-established agents for most of the well-known British manufacturers in Rangoon.

There are few local contractors—generally speaking they are foreign concerns—but two of the better known are most anxious to collaborate with British contractors on large schemes.

The suggestion was put forward by local contractors, to a member of the delegation, that they felt there was a great need and opening for a plant hire undertaking in Burma. At the present moment, mechanisation is the exception rather than the rule, and very few of the contractors have the capital to sink in the purchase of modern equipment and tackle. This may well be a field in which British experience and know-how could contribute; there will of course be, despite the many large projects, a very great deal of work for the smaller local contractors.

There is no doubt that there are opportunities in Burma for United Kingdom manufacturers of plant and machinery. In most cases the requirements of the Burmese Government will go out to international tender, but we feel that United Kingdom industry is in a good position to make fully competitive offers for the types of equipment and machinery likely to be required for the development programme. We cannot stress too strongly that it will be necessary to quote firm prices and quick deliveries.

PATCHING OF OLD HOUSES

Dr. R. Bradbury's Support for "Humanitarian Approach"

DR. RONALD BRADBURY, FRIBA, Liverpool's City Architect and Housing Director, speaking at Blackpool when he addressed the North-Western Regional Conference of the National Housing and Town Planning Council, said patching of old sub-standard houses would add to the already high rates, but few would begrudge a few extra shillings if that increase would result in families who were forced to live a few years longer in worn-out houses having their lot made a little easier.

"There is a place for the humanitarian approach in all forms of legislation dealing with social problems," said Dr. Bradbury. Technical efficiency alone was not enough, and he was glad that the technique of patching, pending deferred demolition, was included in the Bill, and that the needs of those who had to wait a little longer in the housing queue were not to be forgotten and dismissed entirely.

He felt the Government should be pressed to increase the grant still further, and he added that the work placed a challenge before the technical officers who would have to decide which houses were worth patching and how the patching was to be done. They would have to "make do and mend" and forgo the high standard they adopted in their normal housing work. Old worn-out properties could not be turned into palaces by spending £150 or so.

Dr. Bradbury paraphrased Shakespeare's "Hamlet" by adding:—

> To patch or not to patch; that is the question.
> Whether 'tis better in the end to let them suffer
> The damp and horror of untended homes,
> Or to take up tools against this sea of troubles
> And—by patching—help them.

PERSONAL COLUMN

The board of directors of both James Prepared Woodwork, Ltd., Catford, and Penge Joinery Works, Ltd., Penge, have been reconstituted and are now identical with that of Medway Buildings & Supplies, Ltd., of Rochester. MR. E. R. GIDDINGS has been appointed general manager and MR. R. J. BUTSON, sales manager of these two companies, which will continue to manufacture specialised joinery at Catford and Penge. A full range of standard joinery will shortly be produced at the Rochester works of Medway Buildings & Supplies, Ltd.

MR. G. D. L. GOSLETT, OBE, has been appointed to the board of directors of the Ruberoid Co., Ltd. He will continue to control the Home Sales Division of the company in his capacity as director. Also appointed to the board of directors are MR. C. B. INNES, the company's accountant, and MR. D. L. IRWIN, Junr., general works manager.

£100,000 FOR HISTORIC BUILDINGS

Minister Approves 31 Grants

DURING the past three months the Minister of Works, acting on recommendations by the Historic Buildings Councils for England, for Scotland, and for Wales, has offered 31 grants totalling nearly £100,000 in respect of the following buildings:—

England: Denham Place, Bucks; St. Peter's Vicarage, West Ham; Dunsland House, Devon; Naworth Castle, Cumberland; Althorp House, Northants; Adlington Hall, Cheshire; Gosfield Hall, Essex; No. 1, Myddylton Place, Saffron Walden, Essex; The Temple of the Four Winds, Castle Howard, Yorks; Dorfold Hall, Cheshire; Aubourn Hall, Lincs; Squerryes Court, Kent; Old Mill Hotel, Salisbury, Wilts; Gayton Manor, Northants; Avington Park, Hants; Taunton Castle, Somerset; Chastleton House, Oxfordshire; The Prebends' Bridge, Durham; Mereworth Castle, Kent; St. Osyth's Priory, Essex.

Scotland: The Town House, Haddington, East Lothian; Dunollie House, Oban; Newliston, West Lothian; The Round Square, Gordonstoun; Abertarff House, Church Street, Inverness; Mavisbank House, Polton, Midlothian; Balbithan House, Kintore, Aberdeenshire; Houses on the approach to Stirling Castle, Stirling; Pitheavlis Castle, Perth; Dudhope Castle, Dundee.

Wales: St. James's House, Monmouth.

The grants are made under Part I of the Historic Buildings and Ancient Monuments Act, 1953, towards the cost of urgently needed repairs to buildings which are considered to be of outstanding historic or architectural interest.

One of these grants has been made for a scheme to bring an empty historic building into use. This is Gosfield Hall, in Essex.

One of the conditions attached is that the public shall be given reasonable opportunities to see the historic buildings.

The Minister of Works announced the appointment of the Historic Buildings Councils for England and for Wales on October 27 last, and for Scotland on November 17. On March 25 this year the first grants were made public: 23, totalling nearly £50,000.

To date, nearly 300 applications for aid have been received by the Historic Buildings Councils for England, Scotland and Wales, of which about one third have so far been rejected.

OBITUARY

R. K. Burt

WE regret to record the death of Mr. Robert Kingston Burt, head of the firm of R. K. Burt, paper merchants, of the City of London, which has supplied the paper for the printing of *The Builder* for over 40 years.

Mr. Burt, who was aged 87, was well known in the paper trade, and had been Master of the Worshipful Company of Stationers and Newspapermakers. A quiet but delightful person, Mr. Burt was a keen photographer and for many years had sent his friends, at Christmas, some example of his work. He leaves a widow, son and two daughters, to whom we extend our sympathy. The funeral is at 10 a.m. to-day (Friday) at St. Augustine's, Bexhill.

C. W. D. Rowe

WE regret to announce the death of Mr. C. W. D. Rowe, managing director of the London Brick Company.

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The next time you see a Queen Anne or Georgian house looking as fresh as paint and as sound as a bell, ask yourself why. Two hundred . . . two hundred and fifty years is a long time to resist the destructive inroads of the weather.

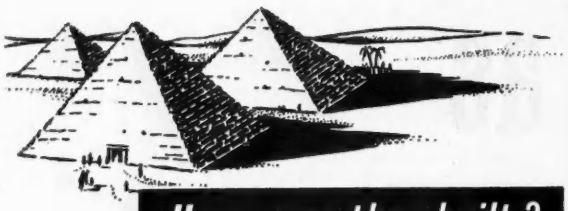
Outside paint is more than a beauty treatment, it has a job to do, a job of protection. And the passage of the years proves one thing without doubt — **White Lead Paint Lasts.**

It does not crack or flake, which means fewer repaints and less expensive ones, since burning-off and therefore labour costs are kept to a minimum.

White lead paint lasts. Magnet White Lead Base HARD GLOSS Paint is the up-to-date version of this trusty friend. Hard Gloss. Lasting Protection. A range of 32 intermixable colours.

Specify **MAGNET** for the *OUTSIDE*

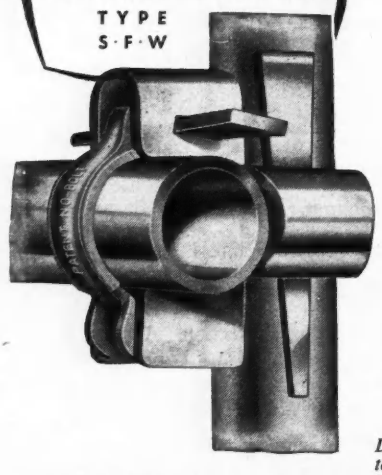
ASSOCIATED LEAD MANUFACTURERS LIMITED — LONDON · NEWCASTLE · CHESTER



How were they built?

It's always been a bit of a puzzle and we can only guess how long it took or how much it cost to build the Pyramids. But the Egyptians used slave labour anyway, so it doesn't really count. Today you have to pay all along the line, labour, time, materials and everything, so any ideas on saving are very welcome. When it comes to scaffolding there's a very simple way to cut costs and that's by using the fabricated NO-BOLT Double Coupler. It's strong and makes the safest, most secure method of joining scaffolding tubes yet thought of. And You don't need to be a Nubian slave to fix it, nor do you need spanners, nuts or bolts; a mere tap with a hammer is all that's required. Releasing it is just as easy. It's fastened by nothing more complicated than a wedge, an idea that's as old as the Nile, in a setting as modern as tomorrow.

FABRICATED
NO-BOLT
DOUBLE COUPLER
TYPE
S·F·W



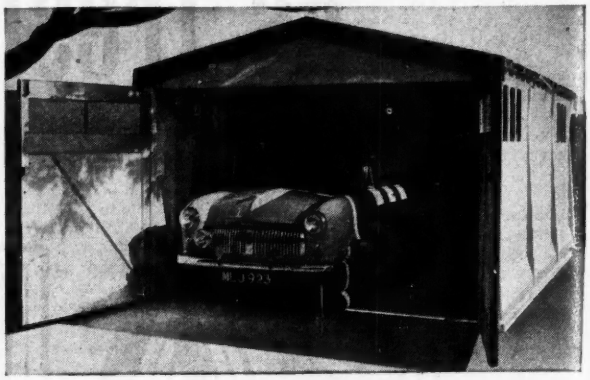
Supplied also with
CAPTIVE WEDGES
which cannot be lost. Quick delivery ex-stock and an efficient service guaranteed.

Demonstrations arranged to prove that with the NO-BOLT system any form of scaffolding can be erected at less cost. Five times the work for the same labour cost—an 80% saving—is typical

BB & EA

BRITISH BUILDING & ENGINEERING APPLIANCES LTD.
63-65 London Road, Sandy, Bedfordshire. *Tel.: Sandy 104*

The Marley Concrete Garage



offers all the advantages of the traditional brick garage at considerably lower cost

It has been specially designed for easy erection by unskilled labour. The detailed notes and drawings provided make assembly on site a simple matter. Made of high-grade reinforced concrete, with asbestos roofing and stout timber doors, it is attractive in appearance and, although very strong and permanent, it can easily be taken apart and moved if desired. It is fire-proof, rot-proof and vermin-proof and gains the ready approval of all local authorities.

From £50 Complete

Available in widths of 7 ft. 10 ins., 9 ft. 2 ins., 11 ft. 10 ins. and 13 ft, 2 ins., and in lengths as required.

Delivery free within a radius of 75 miles of Romford, Guildford or Cheltenham.

Write for illustrated brochure to your nearest works. Erection service available.

MARLEY CONCRETE PRODUCTS

SURREY CONCRETE LTD., PEASMARSH, GUILDFORD, SURREY
SHURDCRETE LTD., SHURDINGTON, near CHELTENHAM
MARLEY TILE CO. LTD., STIFFORD ROAD, STH. OCKENDON, ESSEX

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AND ASSEMBLIES FOR ALL PURPOSES

RHODES CHAINS LIMITED
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LONDON, W.C.2
TELEPHONE: CHANCERY 8135-6-7
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The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	1
Pit Sand	,,	1	1	8
Washed Sand	,,	1	3	8
¾ in. Shingle	,,	1	0	0
¾ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate	per ton	3	0	9
2 yds. of fine and 2.6 yds. of coarse per ton				

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	,,	4	16	6
1 to 6 tons, site	,,	5	5	6
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	4	6
1 to 6 ton do. site	,,	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	,,	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	,,	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	2	3

BRICKS

Full Loads.				
First Hard Stocks	per 1,000	11	0	6
Second Hard Stocks	,,	10	4	6
Mild Stocks	,,	8	13	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C.				
District Commons	,,	5	13	0
Cellular do.	,,	5	13	0
Keyed do.	,,	5	15	0
Rustics	,,	6	18	0
Cellular Rustics	,,	6	18	0
Single Bullnose do.	,,	6	13	0
Sandfaced	,,	7	13	0
Best Blue Pressed Staffs (London Stations) ...	,,	24	14	6
Do. Bullnose (London Stations)	,,	25	8	6
Blue Wire Cuts (London Stations)	,,	22	7	6
Midhurst Lime Bricks (London Sites)	,,	10	3	0
Uxbridge Whites (London Sites)	,,	9	1	6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	24	6	0
3 in. do. (London Stations)	,,	29	3	3
2½ in. Machine-made Sandfaced Red Facings (London Sites)	,,	13	12	0
2½ in. Machine-made Multi Red Facings (London Sites)	,,	13	17	0
2½ in. Hand-made Sandfaced Red Facings (London Sites)	,,	14	7	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	,,	14	7	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	,,	13	6	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	per 1,000	14	4	6
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality				

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads.		
2 in.	140 yds.	per yd. sup.	4 3
2½ in.	140 yds.	,,	4 6
3 in.	120 yds.	,,	5 0
4 in. (6 cavity) ...	95 yds.	,,	6 7
Half blocks at no extra charge.			

CLINKER CONCRETE.

2 in.	100 yds.	,,	3 7
2½ in.	85 yds.	,,	4 2
3 in.	75 yds.	,,	5 0
4 in.	55 yds.	,,	6 2

CRANHAM

2 in.		,,	6 5
2½ in.		,,	7 1
3 in.		,,	8 3
4 in.		,,	10 2
4½ in. Load bearing quality		,,	11 2

FLOOR BLOCKS

3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads	per 1,000	31	10 0
4 in. do.	,,	34	13 0
5 in. do.	,,	39	7 0
6 in. do.	,,	46	16 0
7 in. do.	,,	54	1 0
8 in. do.	,,	61	15 0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10%+67½%	+10%+97½%	+10%+107½%
Tested Quality	+37½%+67½%	+37½%+97½%	+37½%+107½%
B.S.S. Tested do.	+47½%+67½%	+47½%+97½%	+47½%+107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	8	6
4 in. do.	,,	13	14	6

STONE

Bath Stone—				
Monks Park...	per ft. cube		6	10
St. Aldheim Box Ground	,,		7	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	,,		7	7
Beer Stone. Delivered London area	,,		7	3
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	,,		7	7½
Hopton-Wood Stone—				
F.O.R. Quarries, Wirksworth, Derbyshire—				
¾ in. Slabs for wall lining, sawn two sides in random sizes up to 5 ft. and not over 15 ft. super in area	per ft. sup.		6	2
1½ in. Slabs for paving, sawn two sides as above described	,,		8	6
Yorkshire Stone—Blue Robin Hood Quality.				
Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	4	3
12 in. × 6 in. do. do.	,,	2	6	0
12 in. × 3 in. Plain coping, twice throated ...	,,	1	15	4
12 in. × 3 in. Weathered and twice throated coping	,,	2	7	4
14 in. × 6 in. do. do.	,,	2	2	8
4½ in. × 9 in. Plinth, rubbed on top and face ...	,,	1	18	1
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.		6	9

STONE—*continued*

		£ s. d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1 3 5
Do. do. fair one edge for fair faced brickwork		1 7 10
Hard York—		
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run	8 2
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2 3 8
12 in. × 6 in. Plain Steps, rubbed top and front ...	,,	1 18 3
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.	7 10
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2 13 10

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000		
Machine-made Pantiles and French pattern Tiles from Lincolnshire district		29 8 0
Hand-made Pantiles Berkshire district		47 10 0
Hand-made Double Roman Bridgwater district ...		56 17 6
Hand-made 10½ × 6½ tiles Berkshire district		13 1 9
Machine-made 10½ × 6½ Staffordshire district		13 5 0
Hand-made Hip and Valley tiles per doz.		1 8 9
Machine-made Hip and Valley tiles do.		1 6 6
Concrete tiles 10½ × 6½		7 14 6
do. Interlocking (49S)		18 9 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.		
24 × 12		113 0 4
22 × 12		93 16 0
22 × 11		84 15 0
20 × 12		79 19 6
20 × 10		74 12 0
18 × 10		53 18 9
18 × 9		47 5 6
16 × 10		44 7 0
16 × 8		34 10 6

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—				
Joinery quality	Ex. Wharf	per standard	£105 to £125	
Carcassing quality	do.	,,	£90 to £100	
1 in. Tongued and Grooved Flooring	do.	,,	£106 0 0	
Hardwood—				
Mahogany—African S.E. ...	do.	per ft. cube	1 5 0	
do. Honduras do. ...	do.	,,	3 5 0	
Oak European do. ...	do.	,,	1 17 6	
do. Japanese do. ...	do.	,,	2 5 0	
do. English Logs sawn	do.	,,	1 5 0	
Teak 8 in. average S.E.	do.	,,	3 0 0	
Walnut African Logs sawn	do.	,,	1 1 0	

DOORS (in Lots I-11)

Delivered London area.		
1½ in. 4 Horizontal Panel Pattern 4 in. deal		
2 ft. 0 in. × 6 ft. 6 in.	each	1 12 0
2 ft. 3 in. × 6 ft. 6 in.	,,	1 13 0
2 ft. 6 in. × 6 ft. 6 in.	,,	1 14 0
2 ft. 9 in. × 6 ft. 6 in.	,,	1 16 6
2 in. do. but top panel open. Pattern 4 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	,,	2 9 0
2 ft. 9 in. × 6 ft. 6 in.	,,	2 11 6
2 in. Panel, top panel open. Pattern 2 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	,,	2 1 9
2 ft. 9 in. × 6 ft. 6 in.	,,	2 3 6

SUNDRIES

Delivered London area		
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds to 1 ton)	per yd.	5 8
1½ in do. (67 yds. to 1 ton) ...	,,	7 4
2 in. do. (52 yds. to 1 ton) ...	,,	8 11½
2½ in. do. (45 yds. to 1 ton) ...	,,	10 3
3 in. do. (39 yds. to 1 ton) ...	,,	11 5½
Quantities under 1 ton add 1d. per ½ in. of thickness.		
½ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2 2 6
¼ in Hardboard do.	,,	2 3 6
⅜ in. do. do.	,,	3 5 0
⅜ in. Asbestos Flat Building Sheets ...	per yd. sup	3 2
Roofing Felt, 1-ply	,,	1 6
do. 2-ply	,,	1 9
Best Scotch Glue, in slabs	per ½ cwt.	5 0 0
do. pearl	,,	5 5 0
Croid Glue	28 lb.	2 5 0
Cut Nails 3 in. (1-ton lots)	per ton	54 5 0
do. 4 in. and up (1-ton lots)	,,	50 15 0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2 16 3
do. 4 in. and up (4-cwt. lots)	,,	2 12 9

METALS

STEEL JOISTS, ETC.

Basis Joists—		
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	38 7 6
Extra for sizes		
3 in. × 1½ in.	,,	3 10 0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ...	,,	1 5 0
4 in. × 1½ in.	,,	3 0 0
4½ in. × 1½ in., 24 in. × 7½ in.	,,	2 0 0
5 in. × 3 in., 22 in. × 7 in.	,,	1 0 0
6 in. × 3 in.	per ton	1 10 0
9 in. × 7 in.	,,	5 0
10 in. × 4½ in., 12 in. × 5 in.	,,	15 0
5 in. × 4½ in., 6 in. × 4½ in., 7 in. × 3½ in., 7 in. × 4 in., 8 in. × 4 in., 9 in. × 4 in., 10 in. × 5 in., 10 in. × 8 in., 12 in. × 8 in., 13 in. × 5 in., 14 in. × 5½ in., 14 in. × 6 in., 14 in. × 8 in., 15 in. × 5 in., 15 in. × 6 in., 16 in. × 6 in., 16 in. × 8 in., 18 in. × 6 in., 18 in. × 7 in., 18 in. × 8 in., 20 in. × 6½ in., 20 in. × 7½ in.	,,	10 0
Steel angles average price	,,	39 12 6
Steel tees average price	,,	40 12 6
Fabricated work delivered London—		
R.S. Joists cut and fitted	,,	53 7 6
Compound girders	,,	58 12 6
Stanchions	,,	63 17 6
Compound stanchions	,,	67 7 6
In Roof Work—Trusses and Purlins	,,	79 7 6
Average prices not for awkward work.		
Mild Steel Ferro-Concrete bars to BSS785 ex London		
Stock ⅜ in. diam., and upwards	,,	39 14 6
⅜ in. diam.	per ton extra	3 12 0
½ in. do.	,,	2 17 0
⅝ in. do.	,,	2 2 0
¾ in. do.	,,	1 7 0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts :

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A — 1½%		
Class B + 7½%	Light + 23½%	Malleable List — 39½%+35%
Class C + 23½%	Heavy + 30½%	
Black—		
Class A — 22%		
Class B — 11½%	Light + 11%	Malleable List — 39½%
Class C + ¼%	Heavy + 18½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths	Gutters	Nozzles	Stop Ends
3 in.	3/2	2/9	/10
3½ in.	3/5½	3/–	/10
4 in.	4/5½	3/5	1/2
4½ in.	4/10½	3/9	1/6
5 in.	5/5½	4/2	1/8

C.I.O.G. GUTTERS

3 in.	4/1	3/8	/11
3½ in.	4/6½	3/8	1/2
4 in.	5/–	3/9	1/6
4½ in.	5/5½	4/5	1/8
5 in.	5/11	5/1	1/11

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	6/5½	3/5	4/10
2½ in.	6/9	3/9	6/8
3 in.	7/7	4/9	7/3
3½ in.	8/7	5/8	8/7
4in.	9/11½	6/11	10/2

L.C.C. COATED SOIL PIPES

2 in.	7/7½	5/10	7/2
2½ in.	8/1	6/6	8/11
3 in.	9/0½	7/2	10/8
3½ in.	10/1½	8/11	12/5
4 in.	11/6½	10/–	14/7

Above prices for gutters rain-water and soil pipes for under 3 cwt. lot only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 10% and tonnage allowance. 4-ton lots 5 per cent. 2 ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	21/3	14/3	25/-
6 in.	2	0	1	31/6	29/7	51/3

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	3/9	4/–	4/10	6/5
Shoes...	each	2/5	2/8	3/2	4/3
Single Branches ...	,,	3/9	4/6	5/4	7/6
Bends square or obtuse	,,	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	,,	2/11	3/9	4/3	5/11
do. 6 in. do.	,,	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	,,	/10	/11	1/–	1/2
Angles	,,	2/11	3/5	4/1	4/10
Nozzles	,,	2/10	3/4	3/10	4/7
Union Clips ...	,,	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends	each	2/1	2/5	2/8	2/11	4/3
Stop ends	,,	/9	/10	/11	1/–	1/2
Angles	,,	2/5	2/8	2/11	3/2	4/3
Nozzles	,,	2/1	2/5	2/8	2/11	4/3
Union Clips ...	,,	1/–	1/1	1/2	1/4	2/–

The FIRST HARDBOARD...

- TRAILERS
- COUNTERS
- CARAVANS
- PARTITIONS
- SHOP FITTING
- RADIO CABINETS
- CUT-OUT LETTERING
- WALL AND CEILING LININGS
- EXHIBITION & DISPLAY WORK
- KITCHEN FITMENTS
- PERAMBULATORS
- FORM LININGS
- PANELLING
- HOARDINGS
- FLOORS
- FURNITURE

... with the *Silky* textured Reverse side

Provides greater strength, a most attractive appearance and the ideal base for all types of finish

This Standard Hardboard is obtainable in thicknesses :—

2 m.m., $\frac{1}{8}$" & $\frac{3}{16}$" (hard) $\frac{1}{4}$" (semi-hard)

4' wide x 6', 7', 8½, 9', 10', 11', 12' & 14' lengths.

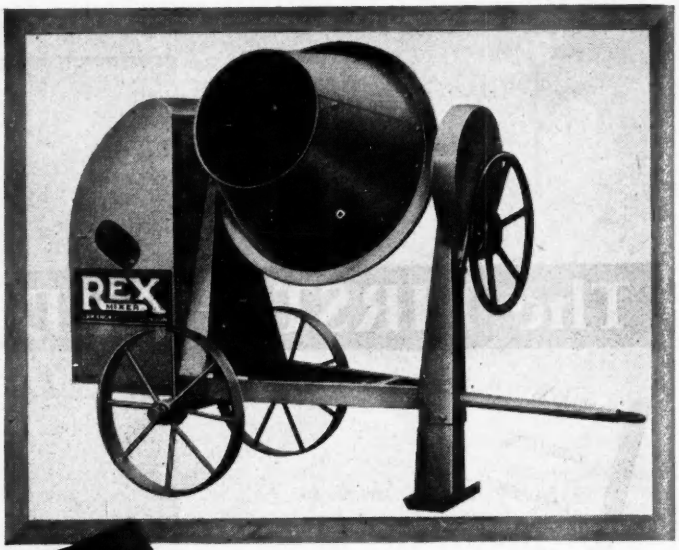
✱ *Obtainable through the usual trade channels*

Manufactured by MESSRS. LJUSNE-WOXNA A.B. LJUSNE SWEDEN

3½T Concrete Mixer

The "REX" has everything you need in a 3½T mixer and will mix mortar as well as concrete. Sturdy, rugged, yet light in weight for easy manoeuvring, simple and easy to operate, economical to run and maintain, the "REX" 3½T is ideal for the small jobs as well as for scattered work on large contracts. Details and prices on request.

Available also with 4-wheel mounting and choice of petrol or diesel engine drive.



Use Rex

and cut your costs!

BLAW KNOX LIMITED (Box 113), 90-94 Brompton Road, London, S.W.3. Telephone: KENsington 5151

BK87

AN AMAZING SAVING

ONE GALLON OF FEBMIX ADMIX COSTING 6/6

SAVES

800 LBS. OF LIME

OR

8 CWTS. OF CEMENT

● IT COSTS YOU MONEY NOT TO USE IT ●

it's

FEBMIX ADMIX MASONRY MORTAR

PATENT APPLIED FOR

Write for technical brochure

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(GREAT BRITAIN) **LTD.**

ALBANY ROAD, CHORLTON-CUM-HARDY, MANCHESTER

TUDOR PARADE, LONDON ROAD, HOUNSLOW, MIDDSX.

Phone: CHORLTON 1063 or HOUNSLOW 0082

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	39 15 0
Mild Steel Bars	37 17 6
Mild Steel Hoops	39 5 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft sheets C.R. and C.A.—	
20 gauge	46 14 6
24 gauge	47 19 6
26 gauge	49 9 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	53 12 0
24 gauge	55 12 0
26 gauge	58 7 0
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	54 12 0
24 gauge	56 12 0
26 gauge	59 7 0

Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area. M.O.H.

All per doz.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	73/6	109/3				
Toilet bib cocks for iron ...	94/6	135/6				
Screwdown stop cocks for iron	63/-	91/3	179/6	308/9	441/-	778/-
do. with two unions for lead	85/-	126/-	223/9	400/-	529/-	1178/-
Double nut boiler screws ...	15/9	22/-	40/-	41/-	56/9	80/-
Heavy Croydon ball valves ...	65/-	148/-	226/9	413/9	586/-	
Plumbers' union brass lead to iron	16/6	20/-	33/-	57/9	71/-	138/9
	1½ in.	1¼ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	28/6	34/9	50/6	78/9	100/9	131/3
Brass sleeves			26/3	26/3	47/3	63/- 64/-
			1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws			60/9	75/9	121/-	207/-
Lead S. trap do.			73/3	91/-	149/-	267/9

	s. d.
Solder	
Plumbers' ... ... per lb.	3 3
Tinmen's ... ... ,,	4 0
Blow pipe ... ... ,,	4 1

Copper tubes BSS 659/1944 on the basic price of 27¾d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.
⅛ in. × 19 gauge ...	12½	Total per lb.	40½
¼ in. × 19 ,, ...	10½	,, ,,	38⅛
1 in. × 18 ,, ...	9½	,, ,,	37⅛
1¼ in. × 18 ,, ...	8½	,, ,,	36⅛
1½ in. × 18 ,, ...	8½	,, ,,	36⅛
2 in. × 17 ,, ...	10½	,, ,,	38⅛

	£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras ... ... per ton	296 5 0
Sheet Zinc, 10 gauge (25 SWG) 5 cwt. lots upwards per cwt.	6 16 0
do. 12 gauge (23 SWG) do. ... ,,	6 14 0
do. 14 gauge (21 SWG) do. ... ,,	6 12 9
Brass tubes basic price, plus gauge and manufacturing extras ... ... per lb.	1 10⅞

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

	£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards per ton	133 10 0
Lead Water Pipe in coils ... ... ,,	134 15 0
Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. dia. ... ,,	136 5 0
do. over 4 in. dia. ... ... ,,	138 5 0
Lead Gas or Untinned Compo pipe ... ... ,,	136 5 0
Extras over Basis for quantities under 1 ton	
5 cwt. and under 1 ton ... ... per cwt.	2 0
3 cwt. do. 5 cwt. ... ... ,,	4 0
1 cwt. do. 3 cwt. ... ... ,,	6 0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £89 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

Coarse Pink in 1-ton loads and over Delivered on Site per ton				7	6 6
do. White do. do. ... ,,				7	14 3
Sirapite Coarse do. do. ... ,,				7	9 0
do. Fine do. do. ... ,,				7	17 0
Blue Lias Lime in 6-ton loads ... ... ,,				6	9 6
Hydrated Lime do. ... ... ,,				5	12 6
Lump Lime do. ... ... ,,				5	2 0
White Keen's or Parian Cement in 1-ton loads ... ,,				10	4 0
Pink Keen's or Parian Cement in 1-ton loads ... ,,				9	18 6
Granite Chips in 6-ton loads ... ... ,,				2	6 3
Hair ... ... per cwt.				4	17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site ... per yd.					2 3
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery Delivered site ... ... ,,					2 6

PAINT AND DISTEMPER

Delivered London area		£ s. d.
Ceiling Distemper	per cwt.	1 12 0
Washable Distemper	,,	5 12 0
Gloss Paint	per gal.	2 13 0
Snowcem cement paint (in 1 cwt. drums) ...	per cwt.	3 11 0

Lead Products and Oils.

Ground White Lead, 1 cwt. kegs	per cwt.	8 10 0
Genuine White Lead Paint, 20 gal. lots in 1 gal. tins	per gal.	3 0 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	6 14 3
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 7 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra	per gal.	11 6
Boiled Linseed Oil (5 gal.) do.	,,	12 0

Sundries.

		s. d.
Turpentine substitute (5 gal) Drums extra ...	,,	5 6½
do. do. (40 gal. drum) do. ...	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 2

VARNISHES, etc.

Delivered London area.		s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 15 0
Hard Drying Oak for Inside	,,	1 17 6
Crystal Paper Varnish do.	,,	2 2 6
Eggshell Flat Varnish do.	,,	2 2 6
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	1 17 6
Japan Gold Size	,,	1 10 0
Black Japan	,,	1 5 0
Brunswick Black	,,	1 0 0
Berlin Black	,,	1 5 0
Terebene	,,	1 5 0
Knotting (1 gal. bottles free)	,,	2 0 0
French and Brush Polish (do.)	,,	1 13 0

GLASS

Delivered London area.

	Per ft. super s. d.
18 oz. Sheet Glass, Ordinary Glazing Quality. Cut Sizes ...	5½
24 oz. ,, ,, ,, ,, ,, ,, ...	7½
26 oz. ,, ,, ,, ,, ,, ,, ...	9½
32 oz. ,, ,, ,, ,, ,, ,, ...	1 0
⅛ in. Rolled Plate...	9
⅛ in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns : White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
¼ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each s. d.
P.B.2 5⅜ × 5⅜ × 3⅞ in.	2 9
P.B.3 7⅜ × 7⅜ × 3⅞ in.	4 2
P.B.32 7⅜ × 7⅜ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B.3	6 9
P.B.32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 7
,, ,, ,, ,, 5 ft. sup.	4 5
,, ,, ,, ,, 45 ft. sup.	5 1
,, ,, ,, ,, 100 ft. sup.	5 6

	s. d.
¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—	
Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup., or ditto	11 3
Not exceeding 200 ft. sup., or ditto	16 0

Plates exceeding 200 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices

Quantity Tariff—Sheet and Sundry Glass
The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity.	Per ft. super. s. d.
18 oz. sheet O.Q.	3,000	4
24 oz. ,, ,, ...	2,000	5½
26 oz. ,, ,, ...	2,000	7½
32 oz. ,, ,, ...	2,000	9½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
¼ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
⅛ in. and ¼ in. Rolled Plate or Rough Cast ...	2,000	10½
¼ in. Wired Cast, Hexagonal	2,000	1 0½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM MAY 24, 1954. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/9	3/8½	3/8	3/7½
Labourers	3/3½	3/3	3/2½	3/2

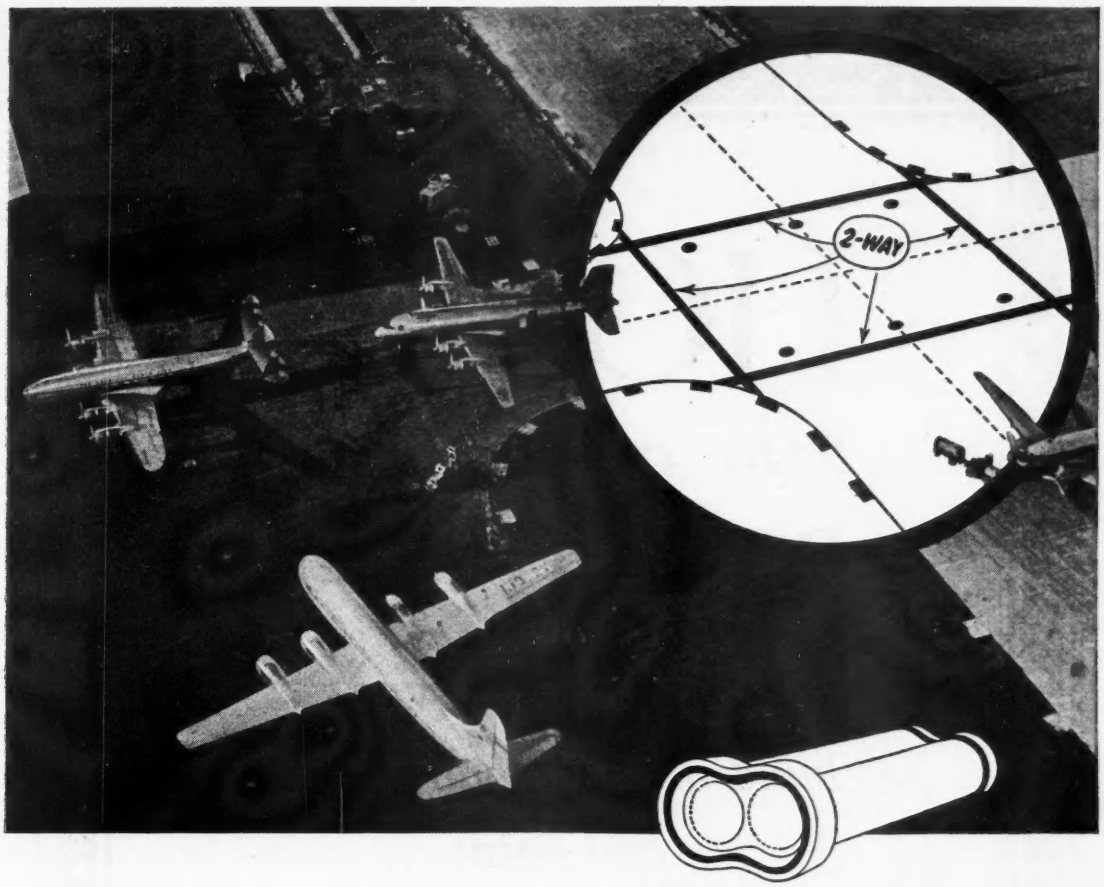
Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A2)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Carnarvonshire, Cnty. of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne Al)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of...	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M. B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lynefiam (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
„ Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A1
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
„ North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 3s. 10½d.; Labourers, 3s. 5d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 10d.; Labourers, 3s. 4½d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 8d. per hour. Women introduced to carry out work other than craft processes, 2s. 4d. per hour.

For Building Trade Wages in Scotland see page 78



Under an Airport Runway

This is a key point in an airport runway pattern. You lay electric cables under here, to serve the runway lights. Those cables must be easy to get at, easy to service. So you run your cables through conduits — in this case 2-way conduits.

If anything goes wrong with those conduits, if they have to come up again — think of the chaos. Think what would happen at a big airport. Last year *in August alone* London Airport handled nearly 8,000 aircraft and 160,000 passengers. A lot depends on those conduits — you never want to have to dig them up again.

That's why, at London Airport, they put down conduits of salt glazed vitrified clay.

Salt glazed conduits are glassy smooth and hard as nails. They are acid-resisting. Sulphates in the soil cannot corrode them. They go down for good! The same applies to the hundreds of salt glazed *drainpipes* that are out there too. Safe and efficient, salt glazed conduits and pipes can — and do — stay down for centuries.

If you never want to have to dig them up again, put down

Salt Glazed VITRIFIED CLAY ***pipes and conduits***

NATIONAL SALT GLAZED PIPE MANUFACTURERS' ASSOCIATION

HOPE'S

zinc-coated steel

DOOR FRAMES

The Time Savers

just build them in—hang the doors and paint

ARE NOW REDUCED IN PRICE

Send for Catalogues

HENRY HOPE & SONS LTD

Smethwick, Birmingham & 17 Berners St., London, W.1

NEWS IN BRIEF

BUILDING SOCIETIES' PRO

The Council of the Building Societies Association to-day (July 9) entertain to luncheon Mr. F. H. Champion, who will shortly relinquish office as Public Relations Officer to the Association—a post he has held with signal distinction for the past 12 years—on attaining the retiring age specified in his contract. The building societies movement has an important part to play in keeping the public informed of its work, and Mr. Champion has contributed much to this. Though he will not completely sever his connection with the Association, he expects, we understand, to be free to carry out consultancies in other directions, and in this we offer him our best wishes.

BUILDERS WIN AT GOLF

The LMBAGS were the victors in the golf match with the Metropolitan Borough Engineers, played at Hendon on June 29. In the morning the builders won the two-ball foursomes by 3½ matches to 2½, and in the afternoon they were again successful in the four-ball foursomes, winning by 5 matches to 1.

JUNIOR BOARD

A junior board has been set up by Thomas French and Sons, Ltd., 156, Oxford-street, W1, in order to give executives' assistants the opportunity to express their ideas and ventilate their problems. The board's constitution and terms of reference are modelled on those of the senior board, and its members represent all staff departments at the factories. At their bi-monthly meetings, they have full authority to discuss matters relating to the company's policy and organisation. It is thought that such meetings would be of great educational value, and that they may spotlight likely candidates for promotion.

INTERIOR LIGHTING

An article on the range of modern interior light fittings for shops and showrooms available to the present-day architect is contained in issue No. 5 of the "International Lighting Review." Entitled "A Shopfitter's Fittings," the article is written by Mr. E. W. Summers, who points out that the policy should be to produce fittings to suit the interior rather than to attempt to apply standard fittings. "International Lighting Review" is produced by Stichting Prometheus, of Amsterdam, whose agent in Great Britain is Mr. A. W. Gosst, 61, Lonsdale-drive, Enfield, Middlesex. Issue No. 5 is well illustrated and produced and should form a pleasantly edifying addition to the library.

INDIAN BUILDERS' DIRECTORY

Builders' Publications of India, Ltd., Janmabhoomi-chambers, Ballard Estate, Bombay, proprietors of "The Indian Builder," have recently published the first edition of "The All India Builders' Directory, 1953-54." This useful publication contains a technical section covering concrete, brickwork, iron and steel, timber, reinforced concrete and other miscellaneous data, and describes the main projects under the five-year plan. "At-a-Glance-Reference" charts enable buyers to see at once the names of firms dealing in specific items, and there is information on Indian manufactured goods in wide daily use by the industry, departmental publications, housing statistics and many other subjects.

WORLD CONVENTION

The next Acrow world convention will be held in Los Angeles, California, in October, 1955.

APPOINTMENT

Mr. Owen Slater, building superintendent for Wigan Council, has been recommended for appointment as housing manager, Camberwell Metropolitan Borough Council.

DEVELOPMENT PLANS

The Minister of Housing and Local Government has approved with modifications the development plans for the County Borough of Great Yarmouth, and the County of Lincolnshire (parts of Kesteven).

CAR PARKS SCHEME

The London County Council at their meeting on July 13 will consider a resolution seeking powers from Parliament to erect car parks under the South Bank site. The scheme would provide covered parking space for 1,000 cars.

SURVEYORS' NEWS LETTER

The Building Surveyors' Institute has now issued its June news letter, covering developments since the meeting held with the Royal Sanitary Institute on April 3. Copies can be obtained from the Building Surveyors' Institute's new offices at Temple Bar House, 227, Strand, WC2.

DRAWING STANDARDS

The following British Standards dealing with equipment for drawing-office use have been recently issued: BS 2,457, "Protractors"; BS 2,458, "French Curves"; BS 2,459, "Set Squares"; and BS 2,460, "Drawing Instruments." Copies of these, price 2s. each, can be obtained from the British Standards Institution, Sales Branch, 2, Park-street, W1.

RUSSIAN ARCHITECTURE

The Society for Cultural Relations with the USSR, 14, Kensington-square, London, W8, have recently published a symposium on "Architecture and Building Technique in the USSR." The booklet is illustrated and contains articles on various aspects of the subject contributed by members of the team of architects who visited the USSR last year. The price is 2s. 6d.

RURAL INDUSTRIES STAND

Competitions in wrought ironwork and pottery were held at the stand of the Rural Industries Bureau during the Royal Show at Windsor (closing to-day). Demonstrations were given by a basketmaker and hurdle-maker, and a roof was thatched in two sections, part of combed wheat reed and part of Norfolk reed. The Rural Industries Stand was organised in co-operation with the Oxfordshire Rural Community Council.

CONCRETE BURSARIES

Applications are being invited by the University of Leeds for bursaries in concrete technology tenable from October, 1954. The value of the bursaries is £350 per annum, out of which the University fees have to be paid. They will be awarded for one year and may in certain circumstances be renewed for a second year. Applicants must hold a degree in engineering or its equivalent. The course will include postgraduate lectures, design, drawing and laboratory work. Applications must be received by the Registrar, The University, Leeds (2), not later than July 19.

ATOMIC BOARD APPOINTMENT

Sir Luke Fawcett, general secretary of the Amalgamated Union of Building Trade Workers, has been appointed a part-time member of the newly formed United Kingdom Atomic Energy Authority at a salary of £500 a year.

ACCIDENT PREVENTION

A report for the year 1953 has been issued by the Accident Prevention Advisory Committee of the Cement Makers' Federation. The facts and figures contained in this report should be of interest to members of the industry in general, as they include analyses of accident frequency rates for various departments as well as analyses of their causes. Copies from the Secretary, Terminal House, 52, Grosvenor-gardens, SW1.

BUILDING TEACHERS' DAY OUT

An excellent day was enjoyed by some 56 members of the Building Teachers' Conference, on June 19, when a visit was made to Guildford and Charterhouse. The main party assembled for coffee at Abinger Hammer, and then proceeded to the Castle grounds at Guildford, and from there climbed to Pewley Down, where picnic lunches were enjoyed. In the afternoon, a visit was made to Charterhouse School, where Mr. A. G. Buck, of the Building and Maintenance Staff, arranged a conducted tour of the school buildings.

PUTTY MANUFACTURERS' ANNUAL MEETING

Interest in Research

AT the annual meeting of the National Association of Putty Manufacturers held on June 29, Mr. G. F. Holdcroft (of Storry, Witty and Co., Ltd., Hull), and Mr. A. Rivet (T. and W. Farmiloe, Ltd., London), were re-elected president and vice-president respectively for the 15th year in succession. Mr. R. J. Musselwhite (C. H. Musselwhite and Son, Ltd., Deptford), representing one of the founder members of the Association, was re-elected hon. treasurer.

In the annual report reference was made to negotiations with the British Whiting Federation Research Council under which some research facilities would be made available to members of the Association. Particular interest was taken in references to methods of testing which had been devised at the Whiting Research Council's Bedford laboratories, which it was expected would be of considerable assistance to manufacturers in producing material to the specified requirements of users of putty for both home and overseas markets.

Attention was also drawn to several reductions in putty prices which had taken place since the last meeting.

PRODUCTIVITY LOAN TO BRICKWORKS

Isle of Wight Scheme

THE ISLE OF WIGHT is likely to become self-dependent in brick production with the aid of assistance from the Government's Revolving Fund for making short-term loans for schemes to increase production and productivity in industry. The first loan in the Southern Region—a sum of £12,000—has been awarded to Island Brickworks, Ltd., of Newport, to facilitate the completion of the company's £100,000 scheme for up-to-date brickmaking plant capable of producing the 250,000 bricks a week the island needs.

TRADE NEWS

FACTORY CLOSING

Celotex, Ltd., have announced that their factory at Stonebridge Park, London, will be closed for annual holidays between July 25 and August 9, both dates inclusive.

COMPANY MAGAZINE

The current issue of the magazine produced by Sissons Brothers, and Co., Ltd., of Bankside, Hull, carries a description of the opening of their new factory. Its pages also include news on the general activities of the company and its employees.

RAF CRASH TENDERS

The Pyrene Co., Ltd., 9, Grosvenor-gardens, SW1, manufacturers of fire-fighting equipment, have received a contract from the Ministry of Supply on behalf of the Air Ministry, for a new type of "Pyrene" foam tender to be supplied in quantity for airfields used by the RAF at home and overseas.

NEWS LETTER

Number 3 in their series of illustrated news letters has been issued by Taylor Woodrow (Building Exports), Ltd., 41, Welbeck-street, W1. One of the articles, entitled "Association of Ideas," gives a brief outline of the "Arcon" Group and their activities. The imaginative presentation of the issue provides the news in an attractive manner.

EXPANSION JOINTING

An expansion jointing for use in filling gaps between large sections of concrete has been developed by the Expanded Rubber Co., Ltd., Mitcham-road, Croydon. Known as "Rubazote," it consists of innumerable closed cells each filled with an inert gas. This cellular construction is claimed to make it impervious to both fresh and sea water, and to be proof against swelling or rot. "Rubazote" is understood to retain its waterproof properties if fractured or damaged.

SNOWY MOUNTAINS SCHEME

An interesting and comprehensive article on the Australian Snowy Mountains Scheme is contained in the spring issue of the "Hunting Group Review." Written by Group Captain H. T. Hammond, OBE, director and general manager of Adastra Airways (Pty), Ltd., the article describes the construction and development of the project which will provide Australia with vast new resources for power and irrigation. The Review, edited by Prince Yurka Galitzine, is published quarterly by the Hunting Group of Companies, 35, Old Bond-street, W1.

AUTOMATIC OVERHEAD CONVEYOR

An overhead chain conveyor is being produced by Geo. W. King, Ltd., of Stevenage, Herts, which is claimed to be the latest development in selective automatic overhead conveying. Each operator automatically has a steady supply of components suspended at the necessary working position, and the component can be reloaded on the same trolley from which it was removed. All the work is off the floor to increase working space, and the conveyor can be routed to suit complicated process layouts and different floor levels. A special system permits the transfer of selected trolleys from one conveyor to another, and the speeds can be fixed or variable. This conveyor system is being used at the works of the Austin Motor Co., Ltd., Longbridge, Birmingham.

ST. COLUMBA'S CHURCH, SW1

The whole of the asphalt basement work, and also some of the roofing, in the rebuilt St. Columba's Church, Pont-street, SW1, which was described and illustrated in *The Builder* of June 25, was carried out by the Excel Asphalte Co., Ltd., of Broadway Chambers, Hammersmith, W6.

WALL PROTECTION

A liquid which is claimed to seal the surface of wallpaper or distempered surfaces so that oil, grease or dirt can be wiped off is being manufactured by Amalgamated Paints (London), Ltd., St. Marks-road, Mitcham, Surrey. Known as "Fend," it is of particular application in the decoration and maintenance of housing estates, public buildings and offices, or those places where wall surfaces are likely to be soiled by passing traffic. It is understood that such non-greasy materials as jam, coffee or soot can also be sponged off.

FLAT HEATING

The "Neofire" produced by Ideal Boilers and Radiators, Ltd., Ideal House, Great Marlborough-street, W1, has been installed in the four Victorian-terrace houses in Holles-street, W1, which were erected by the Ministry of Housing to illustrate how old property can be converted into modern flats. In this installation, the fire heats the living-room and provides background heating to the kitchen and bedroom through the medium of 5½-in. "Neo-Hospital" cast-iron radiators fitted on brackets. It also supplies domestic hot-water through a 25-gallon indirect copper cylinder, fitted with an electric immersion heater for use when the open fire is not required.

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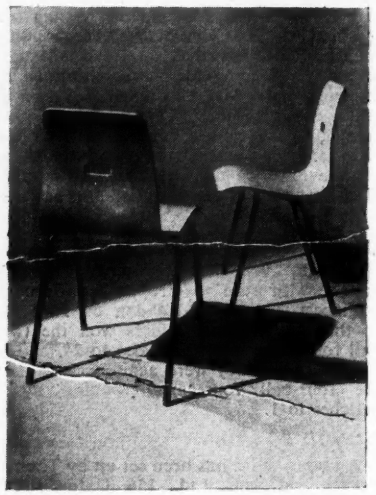
STACKING CHAIRS

The "Q-stak," a new stacking chair with a plastic finish, designed by Robin Day, ARCA, FSIA, has been introduced by Hille of London, Ltd. Comprised of only two simple components, the Q-stak has been designed to give correct seating posture for both working and eating. The all-in-one



The "Q-Stack" Chair

back and seat of preformed laminated beech is joined to the tubular steel leg unit with stainless steel rivets. The simple basic design gives scope for a variety of versions, but of particular interest is the application to the Q-stak's curved wood surface of a hard and durable plastic finish in colours. This process has hitherto been applicable only on a flat surface.

The chair is especially suitable for large-scale seating in schools and canteens, for example, but it might also, it is stated, be introduced in public and commercial buildings, in restaurants, on ships and in the home.

CHANGE OF NAME

Exfoliators (Vermiculite), Ltd., 39-41, Friars House, New Broad-street, EC2, producers of exfoliated vermiculite for all purposes, will in future be known as Dupré Vermiculite (Exfoliators), Ltd. No change of control or policy is involved. Their commercial vermiculite for the building trade, hitherto sold under the name of "Palabora Vermiculite," will now be described as "Dupré Vermiculite." There is no change in the names of their two products, "Micafil" vermiculite for house insulation and "Veri-gro" horticultural vermiculite.

PRICE REDUCTION

Production has been increased of the "Nightstor" storage heater manufactured by the General Electric Co., Magnet House, Kingsway, WC2, which consumes current at off-peak periods and converts it into heat for use throughout the following day. The price has been reduced from £12 10s. to £12 5s., and at the same time the company is giving a preview at the current British Electric Power Convention of two new models of the heater, which will be known as the Nightstor "Minor" and the Nightstor "Major," with loadings of 1 kW and 2.25 kW respectively. Deliveries will begin in September.

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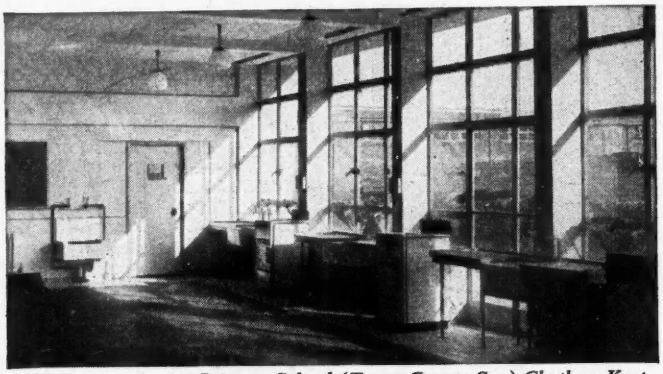
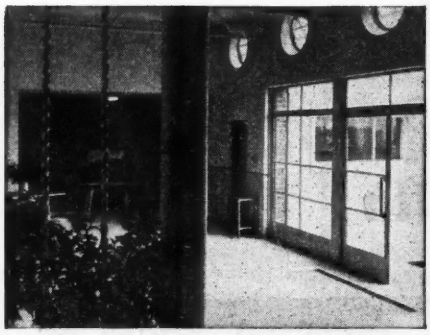
County Architect: John H. Haughan, F.R.I.B.A.

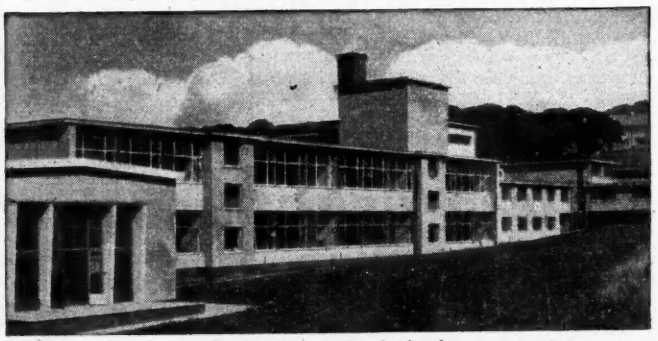
Post-war Schools



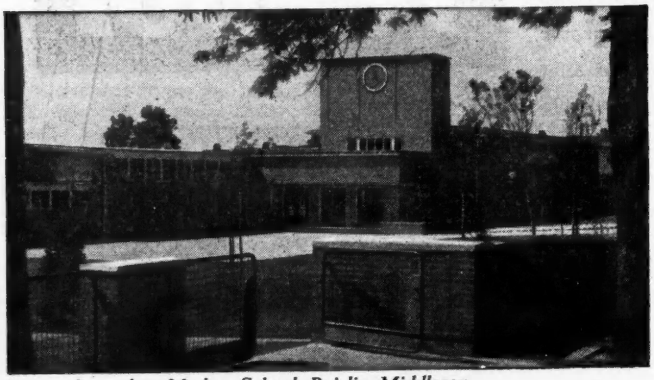
Fort Luton County Primary School, (Temp. County Sec.) Chatham Kent
Architects: Read & McDermott, F.R.I.B.A., in collaboration with
S. H. Loweth, F.S.A., F.R.I.B.A., M.I.Struct.E., County Architect



County Primary School, Maryport, Cumberland



Valley Primary School, Whitehaven, Cumberland
County Architect: John H. Haughan, F.R.I.B.A.



Bourne Secondary Modern School, Ruislip, Middlesex
Architect: Howard V. Lobb, F.R.I.B.A.

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[*From Our Own Correspondents*]

* *Australia.*—Mr. W. E. Ellison, of Universal Suppliers Pty., 685, Lutwyche-road, Lutwyche, Brisbane, is interested in representing UK firms for wholesale or retail trade, on a sole agency or on a cash with order basis, for various goods including:—galvanised iron sheets (both plain and corrugated), and buildings materials. Firms interested are advised to write direct to Mr. Ellison, c/o Commercial Bank of Australia, Ltd., 12, Old Jewry, London, EC2, submitting pamphlets and full particulars of their products. Telephone inquiries to Chancery 4411, Ext. 601, quoting ref. ESB/3435/54.

* *Belgian Congo.*—A call for tenders has been issued simultaneously by the Ministry of Colonies, Brussels and the Government General in Leopoldville for the supply of 24 lots of miscellaneous building materials. builders' hardware and paint. The closing date for the receipt of tenders is July 28, 1954. Inquiries by telephone should be made to Chancery 4411, Ext. 771 or 738 quoting ref. ESB/15921/54.

* *British East Africa.*—Messrs. Punambhai Zaverbhai and Co., Ltd., PO Box 50, Masaka, Uganda, would like to be put into touch with UK manufacturers of galvanised corrugated iron sheets, ridgings and roofing nails. They say that their continuing requirements of these items are quite considerable and that during the current year they will wish to place orders for 700 to 800 tons of GCI sheets 8 by 3 in. corrugations by 26 gauge and/or 28 gauge in lengths of 6 ft. to 8 ft.; in addition they will require 25,000 pieces of galvanised roof ridgings 12 ft. 6 in. of 26 gauge and/or 28 gauge and 50 tons of roofing nails, twisted shank. Manufacturers interested should write to the East African firm direct. Inquiries by telephone should be made to Chancery 4411, Ext. 601.

* *Ceylon.*—Ceylon and Foreign Trades, Ltd., PO Box 912, 467, Union-place, Colombo, would like to act as exclusive indenting agents for a UK manufacturer of hardware and building materials. Interested manufacturers should communicate direct with the company, giving full details and prices of the goods offered. Telephone inquiries to Chancery 4411, Ext. 601, quoting ref. ESB/15669/54.

China.—Construction of a large modern theatre for operas and plays in Peking's main shopping centre is to start shortly. It will be built on a 15,000-square metre lot and will seat 1,300 people. Back stage will be a five-storey building with dressing-rooms, rehearsal and recreational club for actors. There will also be a large ballroom and a roof garden. The project has been designed by the Ministry of Building Construction.

Greece.—Because the guarantees of capital demanded of the American firm Thompson-Starret, who won the adjudication for the construction of the Megdova Hydro-electric project, have not been forthcoming, the Minister of Co-ordination in Greece has now approached the French company Omnium-Lyonnais to see if they will undertake the project. Any agreement reached with this company will be subject to the approval of the French Government who have agreed, under the terms of the Franco-Greek Economic Agreement, to guarantee the financing of this project.

* From the Board of Trade Special Register Information Service.

The perennial problem of providing an adequate water supply for Greater Athens is to be solved by the construction of a new water works which will more than double the present supply of water within three years. The project is being offered to international tender, and work is scheduled to begin at the end of this year. The whole scheme is scheduled to cost about £1½m. and will provide 100 m. cubic metres of water annually. The first part of the project, which is to be completed in three years, is budgeted at £840,000.

Malaya.—Public tenders will be called shortly for the Kallang Basin Bridge which is est. to cost £812,000. The distance along the approved alignment of the bridge between existing river walls is approximately 1,822 ft. The initial width of the deck will be 65 ft.

Portugal.—Studies are being made by the Portuguese company Empresa Termoelectrica Portuguesa SARL with a view to submitting to the Government within a year a plan for the new thermal station which will have an initial capacity of 50,000 kw.

Rhodesia and Nyasaland.—A contract has been placed for the construction of the new terminal building at Chileka Airport, Blantyre, Nyasaland. It is estimated that the cost of the buildings and equipment will be about £75,000. The whole cost will be borne by the Federal Government of Rhodesia and Nyasaland. Construction is to commence almost at once. In Southern Rhodesia, the Salisbury City Council has invited building contractors to submit schemes to the Council for £2,000 houses for sale to the public. Land will be made available to contractors at £500 per acre freehold and they will have to pay for the installation of all services.

It has been reported in the Press that the Schlesinger Organisation intends to complete four cinemas, an hotel and two multi-storey office blocks in Southern Rhodesia at a cost of more than £2m. in the next three and a half years. The Press also reports that Salisbury and Bulawayo are to have new cinemas as part of the Metro-Goldwyn-Mayer chain in Southern Africa.

The Southern Rhodesian Minister of Roads and Irrigation has stated that during the year 1954-55 the Government anticipates spending approximately £1½m. on new roads, with the amount increasing gradually over the next few years. It is expected that from now until 1960 about £15m. will have been spent on federal and territorial roads.

The main investigations for the Shire Valley Project were completed recently. The final report of the consulting engineers, Sir William Halcrow and Partners, is expected to be submitted to the Government in the near future.

The following contracts have been awarded: Extension of Limbe and Mlanja road to Portuguese Border (18 miles) to Messrs. John Laing and Son (Rhodesia), Ltd.; Lilongwe-Salima road (70 miles) to Messrs. George Wimpey and Co., Ltd.; European School, Blantyre (£100,000) to Messrs. Knowles and Fuller, Ltd., of Blantyre, Nyasaland.

A large industrial group has made an offer to the Federal Government to finance wholly and construct the Kariba Project in return for a 50-year franchise to supply power to the Federation. No official statement about this offer or who made it has so far been forthcoming. . . . The Canadian (Overseas) Asbestos Corporation has bought an asbestos mine in the Belingwe district of Southern Rhodesia and this firm now hopes to establish in Southern Rhodesia a cleaning and grading plant large enough to be capable of absorbing the entire output of the asbestos mines.

Thailand.—The Thailand Ministry of Industry is planning to set up a tapioca flour mill with a daily output of 20 tons in Changvad Cholburi, a short distance south-east of Bangkok. A British firm is known to be taking an active interest in the project.

The Ministry also proposes to construct a vegetable-oil mill with an output of 18 tons a day in Chiengmai, the principal town in North Thailand. The National Energy Council has approved plans for two new power stations to meet the increased demand for power in the Bangkok and Thonburi districts. The major project is for a 20,000-kw. steam plant using lignite as fuel. Construction will take several years.

Venezuela.—An Austrian official commercial representative, Dr. Hennet Saint Marie, has visited Caracas with a view to securing Austrian participation in the provision of steel plant for the projected Venezuelan steel industry.

As part of the Caracas slum clearance plan, it has been decreed that 40 super blocks of flats of 15 floors each are to be built at a cost of £1½m. Accommodation will be provided for 40,000 persons. An extensive network of intersecting highways is also planned for Caracas to relieve the congestion of traffic. A new lighthouse is to be erected in Maracaibo, 80 ft. high. A Dutch-financed dried milk plant is to be built in the State of Zulia to supply local requirements.

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The SCOTTISH BUILDER

Kirkcaldy Plan Approved

THE Secretary of State has approved, subject to minor modifications, the Development Plan for the Burgh of Kirkcaldy. This is the tenth Development Plan to be approved by the Secretary of State under the Town Planning Act of 1947.

The Plan sets out the Town Council's proposals for the development of the town during the next 20 years, and is subject to amendment at five yearly intervals or more frequently if necessary. It defines areas for houses, schools, open space and industrial development, and provides for a number of new roads.

New Council House Designs

WITH THE HOPE in view that they will meet the requirements of the Department of Health for Scotland relative to the need for space-saving houses, the County architect of Stirlingshire is to work out designs to bring the cost of the ordinary type of house down to the lowest-cost type.

This has just been reported to Stirlingshire's Public Health Committee, when details were submitted of an interview which a sub-committee had with the Under-Secretary of State for Scotland, Commander T. D. Galbraith.

The committee representatives advanced their suggestion that it seemed illogical that, whereas local authorities were compelled to adopt space-saving standards, no such restrictions appeared to be placed on private persons or organisations engaged in the erection of houses in Scotland.

Replying to their contention, the Under-Secretary of State pointed out that there was no reason why any such restrictions should be placed on private persons or organisations who were now building, or would at any time in the future be engaged in building houses, for they received no financial assistance from public funds.

Landmarks to be Repaired

ST. ANDREWS TOWN COUNCIL have agreed to repair the old Oast House at the Law Mill, Lade Braes, and the mill bridge, both of which are well known picturesque landmarks to this beauty spot in the burgh. The cost is estimated at £300.

Scotland's Housing in May

THE NUMBER of new houses completed in Scotland in May was 3,464, bringing the total built under the post-war programme up to 232,352 (200,176 permanent and 32,176 temporary).

These figures are given in the Monthly Housing Return issued by the Department of Health for Scotland and the Ministry of Housing and Local Government and published on July 2 by HM Stationery Office, price 2d.

The May total of 3,464 new permanent houses compares with 2,873 for April, and 3,180 for May of last year.

"Marseilles Block" Report

GLASGOW is unlikely to build houses on a scale like the "Marseilles Block," a building designed to accommodate from 1,500 to 1,800 people. That was suggested in a report issued following the recent visit to Marseilles of a deputation from Glasgow Corporation.

The conclusion reached by the deputation was that to dismiss the project with the observation that it would be quite unsuitable for Glasgow would be just as wrong as to say that it was perfectly suited to the city's requirements. The houses were so different from anything that was traditional in Scotland that only the experience of living in them over a period involving at least the different seasons of the year would be reliable.

The bringing together of 337 families in one building would be regarded as undesirable because it would be assumed that families could never get away from one another. There was no complaint on that score from the occupiers. It would, however, be necessary to ensure that any such block was occupied by a good type of tenant. The problem of space in Glasgow made it imperative that any proposition that would ease the situation should not be ignored, but the deputation noted that a net density of around 130 persons per acre was not very high. Blocks of houses in the style of the Marseilles project could in appropriate circumstances provide pleasant living conditions. They could not, however, but be very costly, and they would not be suitable for the rehousing of people from slum properties.

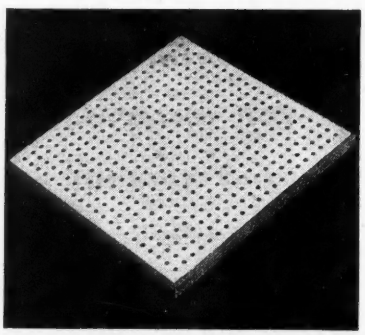
The report added that the internal planning arrangements did not contain sufficient advantages to offset any disadvantages of the traditional British arrangements of living quarters. The narrow frontage, combined with the great depth from back to front, would be unsuitable in Britain.

£1,555 *Showhouse*

MACTAGGART AND MICKEL, LTD., are to open a "thrifty" showhouse, priced at £1,555, at 2, Broomhall-crescent, Corstorphine, Edinburgh, on July 10. The house is a three-apartment terraced villa and is furnished by C. and J. Brown, of Edinburgh, and fitted with all modern gas appliances.

Building Plans Proposal

INVERNESS DEAN OF GUILD COURT have deferred consideration of the proposal that in future they should accept plans only from registered architects. The suggestion was made in a letter from Inverness Architectural Association after a meeting recently. The burgh surveyor, Mr. J. W. Buick, has stated that he did not know what the position would be when the new model building by-laws came into force.



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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from May 24, 1954. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 9d.; Labourers, 3s. 3½d.

For apprentices, the rates are:

Year.	*Percentage of Craftsman's rate.*	*For week of 44 hours.* s.	d.
1st	25	41	3
2nd	33⅓	55	0
3rd	50	82	6
4th	66⅔	110	0
5th	75	123	9

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	3½
Operatives on labouring operations (at end of probationary period)	3	0

NEW BUILDINGS

Airdrie.—Plans prepared and approved for 50 houses to be erected at the Imperial-dr. housing site, for which the architect is J. Austin Bent (A), 15, Palmerston-pl., Edinburgh.

Airdrie.—Corporation has had plans prepared for scheme of reconstruction and additions at St. Margaret's School. The Council A is Harry Shaw, Master of Works Offices, Municipal-bldgs., Aidrie.

Fifeshire.—Plans prepared and approved for new houses and bungalows for Kirkcaldy, which are to be erected at Burnet-cres. and Ailsa-st. The Council A is Robert Meldrum, AMInstCE, AMTPI, Municipal Offices, Kirkcaldy.

Glasgow.—Plans prepared and approved for R. Stevenson, Taylor & Co., Ltd., for alterations and additions at 330-336, Parliamentary-rd., Dennistoun, for which the architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans have been prepared and approved for alterations and additions to be carried out at Laurel-st. by Thomas Henderson & Son (Glasgow), Ltd., 6, Melville-st., Glasgow.

Glasgow.—Plans prepared and approved for alterations and additions for the British Transport Commission at Hope-st. Plans by British Railways, Civil Engineering Department, St. Enoch's Station, Glasgow.

Glasgow.—Corporation to erect a new prim. sch. at the Cadder housing scheme (Site 4). The Council A is John MacNab (F.), Education Offices, 129, Bath-st., and the quantity surveyor J. C. Lyer, FRICS, 1, Blythswood-sq., Glasgow.

Glasgow.—Plans prepared for two Co-operative Societies for new building at Hardgate Roan, and alterations and additions to factory at Renfrew-rd., Shieldhall. The architect is Kenneth Masson (F.), 119, Paisley-rd., Tradeston, Glasgow.

Glasgow.—Plans prepared for Adam C. Brown & Co., Ltd., have been approved for alterations and additions at Washington-st., for which the architects are Noad & Wallace (AA), 278, St. Vincent-st., Glasgow.

Greenock.—Plans prepared by the S.M.T.'s own architects, 171, Clyde-st., Glasgow, for the new omnibus garage to be erected at Inchgreen at an est. cost of £127,000, have been approved.

Lanarkshire.—Consent has been granted for the erection of 96 houses on the Strutherhill, Larkhall.

Lanarkshire.—Plans prepared for new petrol station, etc., at Sommerville, Cairnhouses, near Coalburn, for which the architects are Whyte & Barrie (F.), 38, High-st., Lanark.

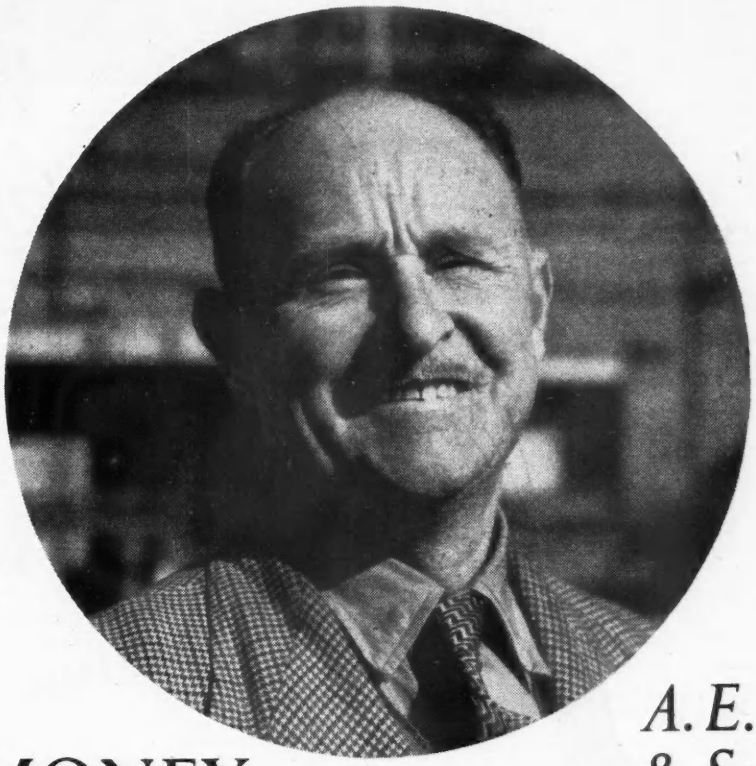
Lanarkshire.—Plans prepared for the Esk Engineering Co., Ltd., Fishcoats-rd., Burnside, Rutherglen, for new workshops, etc., for which the architect is A. Murray White, 31, Stephen-gdns., Maryhill, Glasgow.

Lanarkshire.—Plans prepared for Messrs. Black, 29, Lindsaybeg-rd., Muirhead, for scheme of reconstructions and additions, and extensions to garage, etc. The architects are Lennox & MacMath (F&A), 38, Berkeley-st., Glasgow.

Lanarkshire.—Plans prepared for John Laird & Sons, Ltd., 101, Carstairs-st., Bridgeton, Glasgow, for new factory at Sandyhills. The architects are George Beswell, Mitchell and Johnstone (F&A), 256, West George-st., Glasgow.

Lanarkshire.—Plans prepared for alterations and additions at The Royal Hotel, Lesmahagow, for Donald M. Smith. The architect is Joseph Kirkwood, 39, Duke-st., Larkhall.

Lanarkshire.—Plans prepared by their own staff of designers for extensions at the Clyde Steel and Tube Works, Mossend, Coatbridge, to be erected by Stewart & Lloyds, Ltd., 41, Oswald-st., Broomielaw, Glasgow.



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FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JULY 13.

*†**Bristol City.**—12 flats, 4 maisonettes and 10 houses in three lots. J. Nelson Meredith (F.), City A. Dep. £2 2s. each.

JULY 14.

*†**Leeds Reg. Hosp. Board.**—Villa for 40 patients, Brandesburton Hall Hospital, Brandesburton, Driffield. A to the Board, Park-par., Harrogate. Dep. £2 2s.

***Meadowfield and District Social Club and Institute.**—New club and recreational hall premises, Meadowfield, Durham. J. W. Whitfield, Secretary, Frederick-st. North, Meadowfield, Durham. Dep. £2 2s.

JULY 15.

***Glasgow Corpn.**—Eight shops and 12 maisonettes at Barholm-sq., Garthamlock. A and Planning Dept., 20, Trongate, Glasgow, C1.

***Harrow BC.**—12 garages at Grove estate, Pinner. BE&S. Dep. £2.

JULY 16.

*†**Newcastle Reg. Hosp. Board.**—New X-ray department at Sunderland Children's Hospital. R. Dobbin, Secretary, Dunira, Osborne-rd., Newcastle upon Tyne, 2.

JULY 17.

*†**Durham CC.**—Additional accommodation, Cockton Hill County Infants' School (Woodhouse Close). G. R. Clayton (F.), County A, Durham.

*†**Essex CC.**—Chelmsford Lawford Mead City. Junior and Infants' School. County A, Chelmsford.

JULY 19.

*†**East Suffolk CC.**—Alterations, "Hillcroft," Stowmarket, into clinic. County A, Ipswich. Dep. £2 2s. Tenders by August 5.

*†**Ruislip-Northwood UDC.**—34 houses and 18 homes. E&S. Tenders by August 16.

*†**Somerset CC.**—Erection of Churchill School and Williton School. R. O. Harris (F.), County A, Taunton. Dep. £2 2s. each.

JULY 21.

***Bristol City.**—Crematorium, Canford-la. J. Nelson Meredith (F.), City A. Dep. £2 2s.

***Hants Police Authority.**—Police house at Hythe, near Southampton. County A, Winchester. Dep. £1 1s.

*†**Norfolk EC.**—(a) Thetford St. Mary's new primary school; (b) Wotton new secondary modern school. Chief Ed. Officer, Norwich.

*†**Winchester City.**—44 dwellings, Weeke Manor estate. A. S. Wilson & Ptnrs., chartered quantity surveyors, 8, Storey's Gate, SW1. Dep. £2 2s.

JULY 22.

***Sittingbourne and Milton UDC.**—Five shops with 10 maisonettes over, Canterbury-rd. estate. E&S.

JULY 23.

***Drayton RDC.**—(1) 22 dwellings at Hodnet; (2) four dwellings at Moreton Wood; (3) two dwellings at Willaston-rd., Calverhall; (4) extension to roads and sewers at Hodnet. Hind & Brown, L/ARIBA, District Bank-chbrs., Hanley, Stoke. Dep. £2 2s.

JULY 24.

*†**Coventry Corporation.**—Home for 42 aged people, Bell Green. City A. Dep. £3 3s.

JULY 26.

***Bromley BC.**—Three public conveniences at (a) Queens-gdns.; (b) Hayes-st., Hayes; (c) Fox-la., Keston. BE. Dep. £2 2s.

Lyme Regis BC.—Construction of a massed concrete wall, approx. 1,000 ft. long, with drainage works, on the cliffs at East Cliff. TC. Dep. £2 2s.

*†**Newcastle Reg. Hosp. Board.**—Alterations to plastic surgery theatre suite. R. Dobbin, Secretary, "Dunira," Osborne-rd., Newcastle upon Tyne, 2.

Ongar RDC.—26 houses at Shelley. E&S. Dep. £2 2s.

*†**Suffolk and Ipswich Fire Authy.**—Extension to fire stations at Mildenhall and Debenham. County A, Ipswich. Dep. £2 2s. Tenders by August 24.

JULY 27.

***Ilford BC.**—Cricket pavilion, Goodmayes Park, Goodmayes. BE. Dep. £2 2s.

JULY 28.

***Chesterfield RDC.**—Additions, etc., public convenience, The Green, North Wingfield. J. B. Wikeley. E. Dep. £2 2s.

JULY 29.

*†**Glasgow Corpn.**—Work in connection with 1,106 houses, Castlemilk. A and Planning Dept., 20, Trongate, C1.

JULY 31.

*†**Hants CC.**—Erection of (1) Fareham secondary grammar school; (2) Lymington secondary modern school; (3) Farnborough Fox-la. junior school; (4) Hythe junior school. County A, Winchester.

AUGUST 3.

***Luton BC.**—Four old people's dwellings at Yeovil-rd.; eight in Park-st. BE. Dep. £2 2s. each contract.

***Merton and Morden UDC.**—Sports pavilion, King George's Field, Morden. H. May, Clerk. Dep. £2 2s.

NO DATE.

Scottish Special Housing Association, Ltd.—Erection of 60 space-saving houses at Cunnihar site, Tillicoultry. Scottish Special Housing Association, Ltd., 15/21, Palmerston-pl., Edinburgh, 12.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JULY 19.

***Cheadle and Gatley UDC.**—(1) provision of 200 radiators; (2) 200 boilers; (3) connection of these units in council houses. E&S. Dep. £2 2s.

JULY 24.

***Southport CBC.**—Materials for 54 houses, Radnor-dr. housing estate. Boro' A & TP Officer, 93-105, Lord-st. Dep. £1 1s.

JULY 26.

***LCC.**—Cleaning, repainting, etc., six various bridges. Chief E, Room 450D. Dep. £1.

***Wrexham BC.**—Electrical installation to three community centres. BE&S, 31, Chester-st. Dep. £2 2s.

JULY 30.

***Luton BC.**—(a) Suspended insulation board ceilings for William Austin school. BE. Dep. £2 2s.

ROADS, SEWERAGE AND WATER WORKS

JULY 16.

†**Cookham RDC.**—Main drainage of Cookham. C16—contract XI. Howard Humphreys & Sons, consultant engineers, 191, Victoria-st., Westminster, SW1. Dep. £3 3s. Tenders by July 23.

JULY 22.

Maidenhead BC.—Resurfacing works at (a) Alwyn-rd.; and (b) Courthouse-rd. BE&S. Dep. £2 each contract.

Mexborough UDC.—Advance preparation works on the Clayfield housing estate. A&S, Council Offices, Adwick-rd., Mexborough. Dep. £3 3s.

***Towcester RDC.**—Advance preparation work No. 4 housing site. G. Berridge, architect, 163, Watling-st. West. Dep. £2 2s.

Wharfedale RDC.—About 1,300 lin. yds. water mains, with fittings, at Fewston. Silcock & Simpson, engineers, 10, Park-row, Leeds. Dep. £3.

JULY 26.

Beverley RDC.—Joint sewer—contract No. 1. John H. Haiste & Partners, consultant engineers, 4, Queen-sq., Woodhouse-la., Leeds, 2. Dep. £3 3s.

Calne BC.—About 3,900 lin. yds. sewers, manholes and other works. Harvey, McGill & Hayes, engineers, 38, Market-pl., Chippenham. Dep. £5 5s.

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Whitby RDC.—Laying of 3-in. main, construction of reservoir, etc., Commondale. E&S, Council-chbrs., "Eskholme," Whitby, Yorks. Dep. £2 2s.

JULY 31.

Hunstanton UDC.—Sea defence works at North Promenade. Scott & Wilson, Kirkpatrick & Ptnrs., engineers, 47, Victoria-st., SW1. Dep. £5 5s.

NO DATE.

Hong Kong Government.—Development of Kai Tak airport, including 3¼-mile sea wall, reclamation of about 160 acres of land and construction of paved runway. Scott & Wilson, Kirkpatrick & Ptnrs., engineers, 47, Victoria-st., SW1.

Wolverhampton CB.—Stableford waterworks—pumping pipeline. WE & Manager, 37, Merridale-rd., Wolverhampton. Dep. £3.

GENERAL BUILDING WORK

(LONDON)

Bermondsey.—DWELLINGS.—Revised layout plans have been prepared by Clifford Culpin & Ptnr., architects, 3, Southampton-pl., WC1, increasing the accommodation to be provided on the Tower Bridge-rd. sites Nos. 12 to 16 (Abbey-st. North) to a consequent total of 306 dwellings and 15 lock-up shops. The architects are to proceed with working drawings for the first phase development of the site (in the area bounded by Tower Bridge-rd., Purbrook-st., Riley-rd. and Abbey-st.) by the erection of 45 flats, 17 maisonettes and four lock-up shops. TP Com. have approved the revised plans.

Friern Barnet.—HOUSES.—TP permission has been granted to proposals by J. C. Taylor & Son, builder, 4, Woodbury-gr., N12, providing for the erection of a pair of houses on the site of Nos. 22-24, Hemington-ave., N11.

Friern Barnet. — DWELLINGS. — Town planning approval has been given to proposals by UDC for the erection of 14 dwellings on land at the rear of Nos. 171-179, Oakleigh-rd. North, N20.

Twickenham.—MINISTRY BUILDING.—The erection of a three-storey building at the junction of Heath-rd. and Saville-rd. is proposed, for use by the Ministries of National Insurance and Labour.

Woolwich.—FLATS AND MAISONETTES.—Hsg. Com. has approved detailed proposals prepared by BE for the erection of 39 flats and eight maisonettes, with estate office, library and works depot, on the Coldharbour estate. The total area covered by the block will be 1,780 ft. MH&LG approval is to be sought.

Woolwich.—FLATS.—Scheme submitted by BE for the development of the site of Nos. 13-17a, Eglinton-hill, Plumstead, by the erection of a block of 12 three-storey flats has been approved by Hsg. Com.

Woolwich.—FLATS.—A revised scheme for the development of the war-damaged sites of Nos. 1 and 2, Nightingale-pl., by the erection of 11 flats, submitted by BE, has been given approval by Hsg. Com.

(PROVINCIAL)

Atcham. — RDC propose erection of permanent houses on Grafton and Atcham Airfields.

Barrowford.—UDC approved layout for 29 houses on Higher Causeway Estate.

Biddulph.—UDC approved provisional layout for new Civic Centre on Park-la. Estate.

Billingham-on-Tees.—UDC Hsg. Com. recommend erection of 24 houses at Port Clarence. S, J. H. Shepherd, Council Offices, Haverton Hill.

Birkenhead.—Cammell Laird & Co., Ltd., propose construction of large, new dry dock.

Birkenhead.—Dale, Forty & Co., Ltd., London, propose erection of new shop premises. Architects, North & Partners, 40, Broadway, Maidenhead.

Blackpool.—BC approved scheme for adaptation of Grundy House to form residential nursery. To invite tenders from selected contractors for 67 houses (Contract No. 4) on Grange Park Estate Extension.—EC to prepare plans for extensions to Roseacre Sch. and extensions to St. Nicholas Sch.—Plans submitted to BC: 13 houses and garages at St. Walburgas-rd., for S. Gregson; 8 bungalows and garages at Guildford-ave., for W. Hornby, 111, Preston New-rd., Marton; extensions to Russel Hotel, Clifton-dr., for North Staffs. Miners' Welfare Convalescent Home.

Blyth.—TC has approved layout plans for 71 houses at Seaton Sluice. Detailed plans to be prepared for 50 of these. D. W. Foster, BE.

Boldon. — UDC approved proposals by William Leech (Builders), Ltd., 2, Clayton-st., Newcastle-on-Tyne, for erection of 132 houses at Mill-la., Whickham.

Bollington.—UDC received approval for erection of additional 38 houses at Henshall-rd., Bollington Cross.

Brighton.—TC propose to build blocks of six- and three-storey flats on land rear of Royal Sussex Cty. Hospital.—Sussex Churches Joint Planning Com., Church House, 9, Brunswick-sq., Hove 2, to erect church on site at Coldean.

Bromsgrove.—RDC to prepare layout for eight houses at Dark-la. and four at St. Kenelms-rd. Architect, H. T. W. Gough, Birmingham; approved plans, 48 houses at Cofton Common, for S. J. Smith & Co.; 32 at Fulford Hall estate, for T. H. Shipway, Ltd.

Bury.—Lancs CC propose adaptation of "Croich Hey," Hawkshaw as residential hostel for aged persons.

Carlisle.—CC received inquiry from company interested in opening cinema on one of Harraby housing estates.

Carlisle.—TC to sell site at George-st. to MoW for erection of Government buildings.

Carlisle.—Plans submitted to TC: Recreational hall at Infirmary-st., for Manchester Reg. Hosp. Board; new operating theatre at Cumberland Infirmary, for Manchester Reg. Hosp. Board; new Parish Hall at St. Herberts Church, Blackwell-rd., for PC Council. Architects, Martindale & Jackson, Carlisle.

Chatham.—TC to build 50 bungalows, cost £49,295.

Coventry.—Singer Motors, Ltd., Coventry-rd. Works, Birmingham, propose rebuilding of war-damaged premises at Paynes-la. Architects, Hurley & Robinson, 6, Cherry-st., Birmingham.

Darlington.—TC to erect shops on Haughton and Nickstream-la. housing estates. Edgar Lawson, Ltd., builders and contractors, Albert-hill, Darlington, have submitted to TC layout plans for land at junction Coniscliffe-rd./Carmel-rd.—Cleveland Bridge and Engineering Co., Ltd., to erect works staff office in Smithfield-rd.—A. Abdale, builder, Darlington, proposes 16 houses in Marina-rd.

Dewsbury.—BC approved plans, six houses at Wrexhall-rd., for G. Richardson & Sons.—Warehouse at Mill-st. East, for H. Day & Sons, Ltd.; processing room at Manorcroft Dairy, Old Bank-rd., for Express Dairy (Northern), Ltd.; canteen at Brewery-la., for Yorkshire Electric Transformer Co., Ltd.; RC church and hall at Chickenley-la., for Rev. W. Backhouse.

Durham.—Tenders to be considered shortly by CC for erection of farmhouse and two steadings at Blue House Farm, Chilton; proposed fire station at Bishop Auckland; and two police houses at Evenwood. Plans by County A. G. R. Clayton. Court-la., Durham.

Durham.—CC to let contract for conversion of premises at Cliff, Seaton Carew, to form police hostel. Cty. A. G. R. Clayton, Court-la.

Durham.—CC have included in this year's building programme special school for children at Horden, and also have plans in hand for similar schools in Tynemouth Division and at Stockton. Plans by G. R. Clayton, County A. Court-la., Durham.

Easington (Durham).—RDC plan lido at Crimden, cost £250,000. Informed by MH and LG that it will consider building of pavilion, est. cost £76,000.

Eccles.—BC approved plans: re-erection of Albert Mill, Silk-st., for Synthetic Supplies, Ltd.; extensions to Masonic Hall, Half Edge-la., for Eccles Masonic Hall, Ltd.; works canteen at Canal Bank Works, for John Thom, Ltd.

Gateshead. — EC received sanction to include in 1955-56 building programme the second part of Hill Head Cty. Sec. Sch., est. cost £140,000. On next year's reserve list will be Greenwell Cty. Sec. Sch. for Boys, est. cost £187,000.

Grimsby.—John Bull Rubber Co., Leicester, to buy 15-acre site for factory on Grimsby's industrial estate at Pyewipe.—Purchased proposed by Yorks. Electricity Board of land for building of transport dept. depot, repair garages and admin. centre. Construction to be spread over three years.

Halesowen.—TC approved plans, offices and lavatories at Factory Centre, Maypole Field, Cradley, for William Hackett, Ltd.; extensions to offices at Narrow-la., Cakemore, for Mucklow Bros.; extensions to die-block dept. at Mucklow Hill, for Walter Somers, Ltd.

Harrogate.—Yorkshire Agricultural Society propose expenditure of £140,000 for development of show site.

Hartlepool.—TC received loan sanction £87,027 for erection of 60 flats in Coverdale-st.

Hazel Grove and Bramhall.—UDC to invite tenders for 36 houses on site off Torkington-rd., Hazel Grove.

Hetton (Co. Durham).—Plans being prepared for pithead baths at South Hetton Colliery. Also proposed to erect canteen and medical centre. Plans by NCB Architect's Dept., Ashfield Towers. Gosforth, Northumberland.

Houghton-le-Spring.—William Leech, Ltd., 2, Clayton-st., Newcastle-on-Tyne, to erect houses in Gillas-la.—S. W. Milburn & Partners, 9, Esplanade, Sunderland, architects for YMCA premises at Fenee Houses.

Hyde.—BC approved plans, 22 houses in Fawley-ave. area, for William Norgrove & Sons, Ltd., Kirkby Sawmills, Hyde.

Keighley.—West Riding EC propose erection of primary or secondary school in 1955 programme.

Leeds.—United Hosp. Board propose erection of teaching hospital in vicinity of General Infirmary. T. A. Lodge, of Lanchester & Lodge, 10, Woburn-sq., London, WC1, consulting architect.

Leyland.—UDC approved in principle first stage of new shopping and civic centre, providing for 10 new shops with flats, offices and showrooms above, and 13 single-storey shops on site of present Council Depot.

Liverpool.—Lovell & Christmas, Ltd., propose erection of cheese factory at Brockfield-dr. Architect, T. M. Alexander, 60, Castle-st., Liverpool.—Tate & Lyle, Ltd., propose additional storey to refinery at Bebington-st. Plans by own staff.—Threlfalls Brewery Co., Ltd., propose rebuilding of Easby Hotel at Beckett-st. Architects, Medcalf & Medcalf, 3, Stanley-st., Liverpool.

Ludlow.—T. E. Gorting, The Anchor Works, Lower Galdeford, proposes the erection of new factory premises.

Macclesfield.—RDC propose erection of 38 houses off Butley-la., Prestbury.

Manchester.—Plans approved for rebuilding of factory after fire damage at 6/8, Holbrook-st., for Mrs. Mary Malam. Plans by S. H. Arnfield, 1, Cranston-dr., Sale, Cheshire.—Entwisle & County (Photo Engravers), Ltd., propose single-storey extension to factory at 44/46, Gt. Ducie-st., Manchester. Architect, A. Roland Walsingham, 8, Ashfield-rd., Cheadle, Cheshire.—Albany Building Co., Ltd., propose erection of 14 houses at Paulden-ave., Baguley. Architects, Drury & Gomersall, Roxy Cinema, Oxford-st., Manchester.—Clifton Chocolates, Ltd., propose single-storey extension to factory at Manor-rd. and Lonsdale-rd., Levenshulme. Architect, A. Roland Walsingham, 6/8, Ashfield-rd., Cheadle, Cheshire.

Manchester.—Reg. Hosp. Board propose new out-patients' department at Chorley and District Hosp., Chorley. Conversion of former pathology laboratory into office accommodation at Crumpsall Hosp., Manchester.

Manchester.—H. G. Allcard & Co., Altrincham-rd., Northenden, propose extensions to factory. Architects, J. Henry Sellers & Son, 78, King-st., Manchester.—J. Smylie & Sons, Ltd., propose erection of warehouse, offices and bank (Stage 1) at Leestone-rd., Northenden. Architects, W. T. Gunson & Son, 10, Marsden-st., Manchester 2.—Manchester Central Property Co., Ltd., propose conversion of Gaiety Theatre, 65, Peter-st., as motor-car showrooms, stores and offices.—Autax, Ltd., propose erection of motor engineering works and garage at Little Peter-st., Hewitt-st. and Gilbert-st., Knott Mill. Architect, Clifford Wild, 51, King-st., Manchester.—Rubber Industries & Sherman Chemicals, Ltd., propose rebuilding of war-damaged warehouse at 47, Broughton-la., Cheetham. Plans by W. R. C. Houston, Manchester House, 30, Burnley-rd., Padiham.

Margate.—TC have applied for consent to borrowing of £25,023 for erection of 18 flats in High-st.

Middlesbrough.—EC has approved site at Berwick Hills for Berwick Hills No. 2 Cty. Prim. Sch. and RC primary school.

Millom.—RDC seek approval for amended layout for 12 houses at The Green.

Newcastle-on-Tyne.—EC to appoint consultants for structural work, heating and ventilating, and electrical installation for proposed third instalment of Rutherford College of Technology.—EC received permission to proceed with another four new schools. Two of these—C of E school and RC school—included in year's building programme, and others, Rutherford High School for Girls and Fairfield School for Boys, included in next year's building programme.—12 private houses to be built at Silver Lonnen by M. Grady, builder, 74, Broadwood-rd., Newcastle 5.—Plans for 151 Council houses in Fawden Park-rd. approved. Architect, G. Kenyon, City A. 18, Cloth Market, Newcastle.

Newcastle-on-Tyne.—W. B. Edwards & Ptnrs., 52, Eldon-pl., Newcastle, architects for alterations in College-rd., for University Union.—Yorkshire Insurance Co. propose offices in Pilgrim-st., to plans by P. L. Browne, Son & Harding, Pearl-bldgs., Northumberland-st.—Revised plans by M. Gatoff, 51, Grainger-st., for furniture factory in City-rd., for E. Kahn & Co., Ltd., approved.—City A. G. Kenyon, 18, Cloth Market, Newcastle.—Arthur & Kirkup, 13, Swinburne-st., Gateshead, architects for proposed laundrette in Raby-st. and Carville-rd., for G. N. & M. A. Coates.—Reg. Hosp. Board to proceed with building of new X-ray block at Children's Hosp. at Sunderland. Architects, S. W. Milburn & Ptnrs., The Esplanade, Sunderland.

Newport.—Audley Engineering Co., Ltd., propose extensions to works at Audley-ave.

Northampton.—EC propose erection of Bective Sec. Mod. Girls' Sch., £139,626 est., and extensions to Grammar School for Girls, £70,000 est., in 1955 programme.

North Riding.—CC to proceed with conversion and extending of Hill House, Richmond, into home for old people. Plans by Cty. A, County Hall, Northallerton.

Ramsbottom.—UDC propose erection of 25 houses and flats at rear of village shops at Pin Meadow, Stubbins.

Ryhall (Lincs).—Layout of 42 houses approved by Ketton RDC. W. J. Hemmings, architect. Tenders to be put out towards end of year.

Salford.—RC Auths. propose erection of Sec. Mod. Sch. of St. Alberts at Douglas Green Farm, £160,000 est. Architects, J. C. Prestwich & Son, Bradshaw-gate-chbrs., Leigh, Lancs.

Salford.—TC considering erection of 6-8-storey flats at Lower Kersal, nr. Littleton-rd. Estate.

Scunthorpe (Lincs).—BC are not to proceed with plan for assembly hall at New Brumby. Other part of scheme (small shopping centre and 14 flats) to be proceeded with.

Sedgley.—UDC propose erection of flats at Summit-pl., Lower Gornal.—To negotiate with J. Ashmore (Builders), Ltd., Bromford-la., West Bromwich, for 76 houses at Gorge-rd. site. Plans submitted to UDC. —Erection of houses at Himley-rd., Lower Gornal, for Baggeridge Brick Co., Ltd.

Sheffield.—Reg. Hospital Brd. propose virus research laboratory and animal house at Lodge Moor Hospital, £10,000 est.

Sherburn-Hill.—Co-op. Society to build new branch premises at Wheatley Hill, Durham. Architects, CWS Architects' Dept., 90, Westmoreland-rd., Newcastle-on-Tyne.

South Shields.—Town Improvement and Streets Com. approved 21 sites for new licensed premises.

South Shields.—Second instalment of EC's scheme for new marine and technical college included in next year's building programme. Architects, Meade, Taylor & Wilson, 17, Sheffield-ter., Camden Hill, W8.

South Shields.—Licensing Justices consented to erection of "Beehive Inn" in River-dr., for Newcastle Breweries, Ltd., Haymarket, Newcastle. Architects, Page, Son & Hill, 75, King-st.

South Shields.—TC has approved plan by William Leech, Ltd., builders, Clayton-st., Newcastle-on-Tyne, to build 72 houses.—TC to obtain tenders later this year for erection of 350 houses in three groups. BE, John Reid, Town Hall.—Waterhouse & Rounthwaite, 165, Westmorland-rd., Newcastle-on-Tyne, consulting engineers in connection with reconstruction and extension of Middle Dock & Engineering Co.'s quay.—Revised plans prepared for converting Whiteleas Hospital into old people's hostel. Subject to Ministry approval, quantities to be prepared. Architect, M. A. Mackenzie, 1, Eldon-sq., Newcastle-on-Tyne.—Sketch plans approved for out-patients' dept. at Ingham Infirmary, for Newcastle Hosp. Board, "Dunira," Osborne-rd., Newcastle-on-Tyne. Board's Chief A, P. H. Knighton, MBE, ARIBA.—Matkin & Hawkins, Barclays Bank-chbrs., Fawcett-st., Sunderland, architects for 14 bungalows at Cloister-av., for R. Nelson. —J. Smeds, 56a, Camden-st., North Shields, appointed architect by EC for proposed Biddick Hall Jun. Mixed Sch.. to be built next year. J. S. Glover, Winchester-st., South Shields, quantity surveyor.

Stafford.—TC received Min. approval for erection of 28 flats at Derrington.

Staffs.—EC approved following schemes as 1955-6 major schools building programme:—Tamworth, Wiggington-rd. Jun. Mixed Inf., £44,968 est.; Stafford, Burton Manor Jun. Mixed Inf., £44,968 est.; Lichfield, Wheel-la. Jun., £51,392 est.; Rugeley, Horse Fair Jun. Mixed Inf., £44,968 est.; Womburn, Giggety Junior, £51,392 est.; Godsall, additional accommodation at Lane Green Junior, £20,000 est.; Codsall, Dam Mill Inf., £21,681 est.; Kidsgrove, Galleys Bank Jun. Mixed Infr., £44,968 est.; Barlaston Jun. Mixed Inf., £44,968 est.; Leek, Haregate Estate Jun. Mixed Inf., £44,968 est.; Castlecroft, Bhylls Estate Jun. Mixed Inf., £44,968 est.; Rugeley two-form entry school plus one classroom, £101,400 est.; Lichfield, three-form entry plus two classrooms, £145,050 est.; Womburn, extensions to form three-form entry less two classrooms, £31,450 est.; Codsall, extensions, £80,000 est.; Madeley, two-form entry plus one classroom, £101,400 est.; Gnosall, two-form entry less two classrooms and two practical rooms, £88,600 est.; Uttoxeter, first instalment two-form entry less two classrooms, £94,200 est.; Hixon, two-form entry less two classrooms, £94,200 est.; Leek, extensions at Westwood Hall, £20,000 est.; Wednesbury, Hateley Heath Jun. Mixed Inf., £44,968 est.; Perry Hall, two-form entry Inf., £40,150 est.; Willenhall, first instalment of Mill-la. Jun. Mixed Inf., £40,150 est.; Bilston, first instalment Bradley Jun. Mixed Inf., £40,150 est.; Barlaston, second instalment Bentley South Jun. Mixed Inf., £40,150 est.; Wednesfield, Kitchen-la. Jun. Mixed Inf., £44,968 est.; Wednesbury, two-form entry, £118,800 est.; Rowley Regis, Hawes Hill Sec., £228,875 est.; Brierley Hill, Bromley-la. Sec., £228,875 est.; Brierley Hill, assembly hall and scullery at Sec. Tech., £12,000 est.; Rowley Regis, completion of extensions at Grammar School, £25,000 est.; Rowley Regis, Barley Mow Jun. Mixed Inf., £44,968 est.; Brierley Hill, second instalment of Glynne Jun. Mixed Inf., £15,000 est.; Rowley Regis, Congreaves Hall Jun. Mix. Inf., £51,392 est.; Clayton, second instalment County Prim., £40,150 est.; Wolstanton, RC Jun. Mixed Inf., £44,968 est.; Knutton, Jun. Mixed Inf., £44,968 est.; Bradwell, Jun. Mixed Inf., £44,968 est.; Chesterton, second instalment Sec. Mod., £99,000 est.; Pelsall, Jun. Mixed Inf., £44,968 est.; instalment of Pheasy Sec., £228,875 est.; Aldridge, instalment of Sec., £228,875 est.; Cannock, further instalment of Calving Hill, £99,000 est.; South-West Staffs, Special Sch., £34,800 est.; Wightwick Hall, Residential Day Special Sch., £60,229 est.; Needwood, Day Special Sch. for Partially Deaf, £12,000 est.; Newcastle-under-Lyme, Special Sch. for Handicapped Children, £12,000 est.; Wednesbury, 8 classrooms and laboratories at Cty. Tech. College, £65,000 est.; Leek, textile workshop and store, engineering workshop and drawing office at College of FE, £15,000 est.; Stafford, workshops, drawing office and classrooms at County Tech. College, £24,500 est.; Cannock Chase, completion of second floor at Mining and Tech. College, £47,500 est.; Tamworth, hall and gymnasium at College of FE, £53,000 est.

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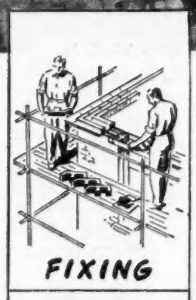
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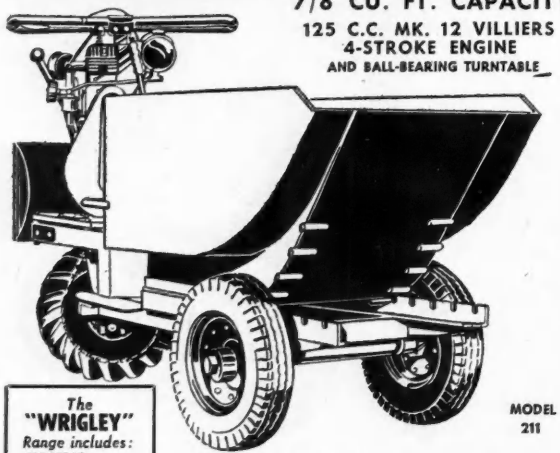

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Stockton-on-Tees.—TC to let contract for tiling, glazing, electrical and plumbing subtrades for 12 bungalows being built by direct labour in Grangefield-rd. Plans by Boro' A, 28, The-square.

Stoke-on-Trent.—TC approved preliminary layout for 192 houses at Coseley-st. and Chell Heath-rd. area of Smallthorne.

Tynemouth.—M. J. Liddell & Son, builders, Great North-rd., Newcastle-on-Tyne, to erect 26 houses on Monkhouse Estate.

Tynemouth.—Corp. Parks and Sands Comm. approved in principle proposals for construction of £300,000 ice rink at Grand-par. Scheme provides for two-storey building incorporating full-sized ice rink, accommodation for 3,000 spectators, restaurant to seat 450 people, and five shops. Architects, A. J. Seal & Ptnrs., Majestic-chbrs., Bournemouth, in conjunction with C. S. Errington, 46, Grainger-st., Newcastle-on-Tyne.

Tynemouth.—TC to obtain tenders for converting North Chapel, Preston Cemetery, into crematorium, cost over £15,000. BE, D. M. O'Herlihy, 16, Northumberland-sq., North Shields.

Whickham (Co. Durham).—UDC approved plans by County A, Court-la., Durham, for new police headquarters in Duckpool-la., Whickham.—It is proposed to erect parochial hall at St. Nicholas' Church, Dunston-on-Tyne. There will be provision for Sunday school, stage, classrooms, dressing-rooms and kitchen. Plans prepared by Thomas Fenbow, Surveyor to UDC.

Wirral.—UDC propose erection of houses, shops and garages at Pensby Hall Estate.

Wolverhampton.—EC seek Min. approval for completion of Penn Cty. Sec. Sch., £37,500 est.; construction of Jun. and Inf. depts. at Under Hill Cty. Prim. Sch., £130,000 est.; construction of St. Anthonys RC Prim. Sch., £40,000 est.; and construction of Bee-la. Cty. Sec. Sch., £185,000 est.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Abram.—Erection of 20 flats at Bickershaw estate, for UDC: *Alex. Wigan & Son, Ltd., Rose Bridge, Ince, £25,060.

Aintree.—Construction of new Conservative Club: *Sefton Building Co., Ltd., Liverpool.

Barnsley.—6 aged persons' dwellings at Burton-cres., and 12 at Greenfoot-la., Monk Bretton, for TC: *C. D. Potter & Sons, Ltd., 119, Doncaster-rd., Barnsley, £15,204 and £8,178.

Bermondsey.—Erection of 32 flats and garages and 18 pram stores at the Barnham-st. site, for BC: ‡Direct Labour, £77,094.

Berwick-on-Tweed.—Erection of block of six houses at Low Greens, for TC. BS, Municipal-bldgs., Berwick-on-Tweed: *Thomas Gardiner & Son, Well Close-sq., Berwick-on-Tweed.

Berwick-upon-Tweed.—Erection of seven bungalows at Dock-rd., Tweedmouth, for TC. J. Armitage, BS: Berwick Building Co., Ness-st., Berwick-upon-Tweed.

Birmingham.—Supply and erection of components for Great Barr comp. school, for EC: *Hills (West Bromwich), Ltd., Albion-rd., West Bromwich, £63,328.

Blackpool.—Erection of family group home at Grange Park, for BC: *R. Fielding & Son, Stanhope-rd. Works, Blackpool, £5,562. Erection of family group home at Mereside estate: *W. R. Ward & Co., 293, Whitegate-dr., Marton, £5,749.

Boldon (Co. Durham).—Erection of garage, showroom and bungalow at West Boldon, for A. H. Testo of Sunderland. Architects, Page Son & Hill, 75, King-st., South Shields: *Veti & Edwards, Ltd., Eden-ter., Durham-rd., Sunderland, £7,800.

Calne and Chippenham.—Six houses and site works at Ditteridge, Box, for RDC. Edwards & Webster, architects, 10, St. Mary-st., Chippenham. Quantities by W. E. Underwood & Son, 21, Gay-st., Bath: *Andrews & Moules, Marshfield, nr. Chippenham, £9,992.

Cheadle (Staffs).—22 houses at Blythe Mount estate, for RDC: *J. A. Bailey, Tape-st., Cheadle, £30,253.

Cockermouth.—Erection of 6 cottages at Dovenby Hall hosp., for Reg. Hosp. Brd.: *Lovell Bros., Harrington, £12,234.

Congleton.—Erection of 6 houses at Lawton Gate, Church Lawton, and 15 at Meadow Bank, Kent Green, for RDC: *Sparks & Yearsley, Bankyfields, Congleton, £25,755.

Dover.—Contract No. 42, 24 houses at Old Folkestone-rd., Aycliffe, for BC. BE, Brook House, Dover: *Hedgecock Bros., Ltd., London-rd., Dover, £28,101.

Essex.—Electrical engineering services at Thurrock tech. col., for CC: *Alpha Manufacturing & Electrical Co., Ltd., 21, Cedars-rd., Clapham, London, SW4.

Glasgow.—Plans prepared for the Western Reg. Hosp. Brd., 64, West Regent-st., for new boiler-house, etc., to be erected at the Southern General Hospital, Shieldhall. Architects, John Keppie & Henderson, and J. L. Gleave, 196, West Regent-st., Glasgow. Excavation, brick, building and allied works: *Hunter & Clark and Co., Ltd., 1179, Gallowgate, Whitevale; steel structural engineering and allied works: *Redpath, Brown & Co., Ltd., Wellington-chbrs., Waterloo-st.; boiler plant, engineering and allied works: *G. N. Haden & Sons, Ltd., 86, St. Vincent-st.; pipe works: *Thomas Cooper & Co. (Builders), Ltd., 25, Dobbies Loan, Townhead. (All of Glasgow.)

Glasgow.—Erection of 2,500 houses in units of four and five at the Castlemilk Housing District: *John Lawrence (Crosswall), Ltd., West Regent-st., Glasgow. (Subject to the submission of formal offer.)

Glasgow.—Plans prepared for extensions for J. & R. Moore & Co., Ltd., at their Morodant-st., factory, Dalmarnock-rd. Grattan & MacLean, FRIBA, architects, 21, Woodside-ter., Sauchiehall-st., Glasgow: *James Laird & Co., Ltd., Dalmarnock-rd., Rutherglen, Lanarkshire.

Greenock.—Erection of 102 houses at the Larkfield housing site, for Corporation. Robert L. Rankine, AMInstCE, AMTPI, Council A, Municipal-bldgs., Hamilton-st., Greenock. Excavation, concrete, brick, building and allied works: *John Dow Stuart & Co., Ltd., 21, Queen Mary's-ave., Pollock, Glasgow, £119,778. Joinery, carpentry, ironmongery and allied works: *Modern Construction Co. (Civil Engineers & Building Contractors), Ltd., 12, Waterloo-st., Glasgow, £37,224. Steel windows, casements and allied works: *Henry Hope & Sons, Ltd., 1, Blythswood-sq., Glasgow, £3,500. Glazing and allied works: *Grieve Graham & Co., Ltd., Dalrymple-st., Greenock, £626. Roof tiling, roughcasting and allied works: *Charles Wilson (Glasgow), Ltd., 200, Castle-st., Townhead, Glasgow, £12,169. Electrical fittings installation and allied works: *Boyne, Smith & Wylie, Ltd., Glasgow, £4,851. Plaster, lathing and allied works: *Charles Wilson (Glasgow), Ltd., 200, Castle-st., Glasgow. Fireplace installations and allied works: *Ronald G. B. Diack, Ltd., Jamaica-st., Greenock, £934.

Hartlepool.—Factory additions on the Hartlepool trading estate, for North-Eastern Trading Estates, Ltd., for John B. Pillin, Ltd., lubrication engineers. Architects, Newrick & Blackbell, 58, John-st., Sunderland: *Randle & Co., Back Dunelm, Sunderland, £30,000.

Hartlepool.—Erection of 60 flats in Coverdale-st., for TC: *T. M. Stonehouse, Ltd., Osborne-rd., West Hartlepool, £86,637.

Kilmarnock.—Work in connection with the new Belford housing scheme. N. S. Sutherland, FIAA&S, Council A, Master of Works Offices, Kilmarnock. Excavation, brick, building and allied works: *James Thomson, Kilmarnock, £10,809. Plumbing, sanitary engineering and allied works: *Matthew Maxwell & Co., 24, West Netherton-st., Kilmarnock, £5,638. Joinery, carpentry, ironmongery and allied works: *A. & J. Bell, Ltd., Gateshead-rd., Crosshouse, £11,384. Steel windows, casements and allied works: *The Crittall Manufacturing Co., Ltd., 103, Bath-st., Glasgow, £1,186. Plaster, lathing and allied works and cement: *James Allan, Ltd., 3, Main-st., Newmilne, £5,207. Tile, roughcasting and allied works: *Duncan Hutchieson & Son, 25, New-st., Irvine, £3,485. Painting, decorating and allied works: *Thomas Moran, Strathaven, Lanarkshire, £997.

Leicester.—Shopping centre on Eyres Monsell estate, comprising 26 shops with 22 maisonettes over, for CC. City A: *C. W. & A. L. Hughes, Ltd., 102, Baggrave-st., Leicester.

Leicester.—Secondary modern school at Downing-dr., Spenefield-la., for CC. City A: *The Butterley Co., Ltd., Civil Engineering Dept., Butterley Park, Ripley, nr. Derby.

Leyland.—54 dwellings at Wade Hall estate, for UDC: *Roy & Partners, Ltd., 25, Cross-st., Manchester, £70,456.

Liverpool.—Erection of married quarters at Speke-rd. and School-la., Woolton, for West Lancs T & AF Association: *W. W. Kenney, Ltd., 92, Liverpool-rd., North Maghull.

Following for Reg. Hosp. Brd.: Erection of Linear Accelerator building at Clatterbridge Hospital: *Scarisbrick Contractors and Haulage Co., Ltd., 81, Dale-st., Liverpool, £21,795. Phase 2 of conversion of Florence Nightingale block into nurses' quarters at Chester City Hosp.: *Mohin (Bebington), Ltd., 30, Village-rd., Bebington, £17,745.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended July 3.

General building and runway constructional work: A. Monk & Co., Ltd., Padgate, Warrington, Lancs. *Building work:* Stanley Hugh Leach, Ltd., 231/231a, Yeading-la., Hayes, Middx. *Painting work:* Decorators (Liverpool), Ltd., 24, Pembroke-st., Liverpool, 3; Alfred Bagnall & Sons, Ltd., 141, Uxbridge-rd., London, W12; Grove Painting & Decorating Co., Ltd., 29/33, Sackville-st., Salford, 3; T. E. Cundy & Son, Ltd., 28, Belgrave-rd., Leicester; Fleetwood Richardson & Co., Ltd., 273, Rochdale-rd., Manchester, 9; F. Parkinson, Ltd., Mowbray-dr., Blackpool; J. B. Abbott (Contractors), Ltd., Sherborne House, 23/25, Northolt-rd., South Harrow, Middx; W. T. Pickering & Sons, Ltd., 19, Watford Heath, Watford, Herts; Fields, Ltd., 248, Kings-rd., Reading, Berks.

General maintenance work: D. M. Geddes & Sons, Toftingall, Walten, Caithness. *Heating services:* E. L. Maiden, Ltd., 27, Fitzroy-sq., London, W1; Richard Crittall & Co., Ltd., 136, Wellington-st., Glasgow, C2. *Ventilating services:* J. Jeffreys & Co., Ltd., St. Georges House, 195/203, Waterloo-rd., London, SE1. *Civil engineering:* Henry Jones & Sons (Rhosneigr), Ltd., Beach-rd., Rhosneigr, Anglesey.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended June 26:—

Building work: R. M. Phillips & Son, Ltd., Estate Yard, Brigg, Lincs; M. J. Gleeson (Contractors), Ltd., 816/822, Chesterfield-rd., Sheffield, 8. *General maintenance work:* F. Shepherd & Son, Ltd., Blue Bridge-la., York. *Resurfacing work:* Amey's Asphalt Co., Ltd., Sutton Courtenay, Abingdon, Berks; Geo. Wimpey & Co., Ltd., Dept. 4, Bridgeway House, Hammersmith Bridge-rd., London, W6; Neuchatel Asphalte Co., Ltd., 28, Royal Exchange-sq., Glasgow. *Civil Engineering:* Exeter Building Contractor, Ltd., 14, Dix's Field, Exeter, Devon.

Painting work: Laughton & Fuller, Ltd., 51, High-st., Brandon, Suffolk; Priestley's Contracts (Gloucester), Ltd., Vicarage-rd., Gloucester; Baxter Bros. (1920), Ltd., Collingwood-bldgs., Newcastle-on-Tyne; F. Troy & Co., Ltd., 131, Gt. Suffolk-st., London, SE1; W. J. Davy & Sons, Ltd., Selby-pl., Gt. Yarmouth, Norfolk; Donald Humberstone & Co., Ltd., North Somercotes, Louth, Lincs; William Herd & Co., Ltd., 88, Baker-st., London, W1; Catons (Sale), Ltd., 72, Washway-rd., Sale, Manchester; N. Harris & Sons, Ltd., Ripple-rd., Dagenham, Essex; A. R. Brinsden, 20, Ladysmith-rd., St. Albans, Herts; C. W. Beretta (Anglesey), Ltd., Station-rd., Rhosneigr, Anglesey; W. T. Pickering & Sons, Ltd., 19, Watford Heath, Watford, Herts. *Painting work and general maintenance work:* Haymills (Contractors), Ltd., Hangar Green, Western-ave., London, W5.

London (British Railways).—Contracts placed by the Eastern Region:—

Part supply and complete erection of lineside fencing in the Ipswich district: *A. J. Binns, Ltd., 99-107, St. Paul's-rd., London, N1. Construction of new main station building, platform buildings and shelters, finishings to subway and ramps, railings to ramps and external works at Potters Bar station: *Kirk & Kirk, Ltd., Atlas Works, 287, Richmond-rd., Putney, SW15. Alterations to goods shed at Colchester St. Botolph's: *George A. Kenney & Sons, Ltd., Army Works, Burrell-rd., Ipswich.

London (Metropolitan Police).—Conversion of premises at Walham Green Police Station: *Apletree & Son, £1,112.

¶London (MOW).—Contracts placed by MOW for week ended June 26.

London: 33, Finsbury-sq., EC2, internal decorations, J. W. Green (Painters), Ltd., 171, Graham-rd., Wimbledon, SW19; Eastern District Post Office, Whitechapel-rd., E1, external and internal decorations, Decra, Ltd., 11, Hanbury-rd., Acton, W3; HMSO, Shepherdess Walk, N1, external and internal decorations, Decra, Ltd., 11, Hanbury-rd., Acton, W3. *Aberdeenshire:* Coastguard Station House, Fraserburgh, extensions for new bathrooms and WCs, Hall and Robertson (Builders), Ltd., 37, College Bounds, Fraserburgh. *Bedfordshire:* MOS Storage Depot, Kempston Hardwick, Bedford, internal and external painting, Baxter Bros. (1920), Ltd., Collingwood-bldgs., Newcastle-on-Tyne. *Hertfordshire:* King's Langley, extension to telephone exchange, Frank J. Mitchell, Ltd., 25, Wendover-rd., Aylesbury, Bucks.

Kent: Gravesend, erection of two jetties, beaching grid and apron wall, Concrete Piling, Ltd., 10, Westminster Palace-gdns., Artillery-row, SW1. *Lancashire:* TE, York-st., Manchester, alterations and adaptations, W. Fearnley and Sons (Salford), Ltd., Constance Works, Eccles New-rd., Salford, 5; HPO, Market-st., Preston, internal and external painting, John Akers, 62, Seymour-st., Chorley, Lancs. *Middlesex:* Telephone Exchange, Edgware, alterations and extensions, Haymills (Contractors), Ltd., Hanger Green, Western-av., W5; National Physical Laboratory, Teddington, external painting, Alfred Bagnall and Sons, Ltd., York House, 141, Uxbridge-rd., W12. *Midlothian:* Newbattle Hostel, adaptations to form supplies division stores, McPherson and Gray, 6, Rutland-sq., Edinburgh.

¶London (War Dept.).—Contracts placed by WD during week ended June 26:—

Nottinghamshire: Bitumen emulsion covering to

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roofs, Evode, Ltd., Stafford. *Wiltshire*: Road repairs, The Western Trinidad Lake Asphalt Co., Ltd., Bristol. *Hampshire*: Rubber flooring, Rubberware, Ltd., London, EC1. *Somersetshire*: Miscellaneous, H. Hoskings, Ltd., Langport. *Dorsetshire*: Miscellaneous, Frank Wyatt & Son, Ltd., Poole. *Devonshire*: Building, Sidney Pratt (Builders), Ltd., Exeter. *Dorsetshire*: Roof repairs, Maurice Hill, Ltd., Bedhampton.

Wiltshire: Building, Eades Bros., Andover. *Hampshire*: Building, L. F. Richardson, Chichester. *Worcestershire*: Building, Farrans, Ltd., London, W1. *Lancashire*: Building, G. & J. Seddon, Ltd., Little Hulton. *Worcestershire*: Miscellaneous, J. Herbert Smith (Kidderminster), Ltd., Kidderminster. *Herefordshire*: Treatment to hut sheeting, Bitumen Industries (Contractors), Ltd., Slough. *Perthshire*: Painting, Neil Nicholson & Co., Kirkcaldy. *Sussex*: Road works, Franks Harris Bros., Ltd., Guildford.

Maidenhead.—16 houses on Spencers estate, for BC. BE&S: *Waymins, Ltd., Virginia Water, £23,380.

Maidenhead.—30 houses on Larchfield/Curls-la. estate, for B.C. BE&S: *J. M. Jones & Sons, Ltd., Maidenhead, £43,450.

Malvern.—15 houses at Malvern Wells, for UDC. C. C. Judson, BSc(Eng), AMICE, MIMunE., AMIWE, S&WE: *Thomas Broad, Ltd., Graham-rd., Malvern.

Middlesbrough.—Work has started on the erection of a RC church in "Orlit" construction in Amersham-rd. Architect, Thomas A. Crawford, 80, Borough-rd., Middlesbrough: *Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees.

Middlesbrough.—Erection of 20 houses (Group 17) at Berwick Hills site, for TC. BE, J. A. Kenyon: *R. H. Bailey & Son, Denmark-st., Middlesbrough, £27,093.

Notts.—Erection of Lutterhall cty. sec. sch., for EC: *J. W. Stamp & Co., Ltd., Nuthall-rd., Bobbins Mill, Nottingham, £143,625.

Runcorn.—66 dwellings at the Penn-la. estate and 43 at Windsor-gr. estate: R. J. Barton & Sons, Ltd., £113,374 and £73,397; Peak Construction Co., Ltd., £113,325 and £71,443; Wm. Thornton & Sons, Ltd., £111,943 and £67,252; Thos. Warrington & Sons, Ltd., £96,436 and £57,630; *W. E. Jones (Contractors), Ltd., Middlewich, £93,175 and £57,630.

St. Austell.—Contract No. 11, erection of 14 houses, Summercourt, together with site works, for RDC. A. W. Townsend, AMICE, E&S, "Trevarna," 12, Carlyon-rd., St. Austell: ‡"Standons," Lewannick, Launceston, £20,672. (Subject to Ministry approval.)

Sedgley.—72 houses at Gorge-rd. site, for UDC: *Nathan Hyde, 6, Claremont-rd., Sedgley.

Southwell (Notts).—20 houses at Eakring, for RDC: *Crookes & Butler, Victoria-st., Mansfield, £28,417.

Stockton-on-Tees.—Erection of 32 houses at Preston-on-Tees, for RDC: *Smith & Twentyman, Kingsley-rd., Stockton-on-Tees.

Stockton-on-Tees.—Erection of 12 bungalows for old people, for TC. Plans by the Boro' A. T. Hartley: *Direct labour.

Tynemouth.—Erection of 12 houses in Verne-rd., for TC. Plans by the BE, 16, Northumberland-sq., North Shields: *C. Dunleavy, Balkwell-ave., North Shields.

Tynemouth.—Supply of steelwork for the proposed Monkhouse cty. prim. sch., for EC. BE, D. M. O'herlihy, 16, Northumberland-sq., North Shields: *Lothian Structural Developments, Ltd., East Lothian, £5,606.

Uttoxeter.—18 houses and 4 bungalows at Church-la., Rocester, for RDC: *O'Dair Bros., Ltd., Uttoxeter Old-rd., Tean, £31,489.

Wantage.—Erection of eight houses at Hermitage, for RDC. J. C. Bagnall, S, Council Offices, Belmont, Wantage: F. D. Carter & Partners, Inkpen, nr. Newbury, £12,803; A. J. Chivers, 63, Cheap-st., Newbury, £12,398; Cooke Bros., Northbrook-st., Newbury, £11,916; *The Childrey Building Co., Ltd., Grove-st., Wantage, £10,979.

Woolwich.—Erection of four houses and 15 flats on sites Nos. 2-6 and 5-21, Bostall-hill, and 60-72, Myrtledene-rd., for BC: ‡Direct Labour, £36,686.

Woolwich.—Erection of three houses on the sites of Nos. 13-17, Barden-st., Plumstead, for BC: ‡Direct Labour, £5,782.

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